THICKENING THE FOG: THE TRUNCATION OF AIR INTELLIGENCE SINCE WORLD WAR II

BY

WILLIAM J. FRY

A THESIS PRESENTED TO THE FACULTY OF

THE SCHOOL OF ADVANCED AIR AND SPACE STUDIES

FOR COMPLETION OF GRADUATION REQUIREMENTS

SCHOOL OF ADVANCED AIR AND SPACE STUDIES

AIR UNIVERSITY

MAXWELL AIR FORCE BASE, ALABAMA

JUNE 2010

APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

_____

COL ROBERT EHLERS (Date)

_____

DR S. MICHAEL PAVELEC (Date)

DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

ABOUT THE AUTHOR

Maj William Fry is currently a student at the School of Advanced Air and Space Studies. He is an intelligence officer and graduate of the US Air Force Weapons School. His career has included assignments in operational units at Ellsworth and Holloman Air Force Bases and as an instructor at the Weapons School. He is a graduate of Squadron Officer's School and the Naval War College, where he earned a Master's of Arts in National Security and Strategic Studies. He has also earned a Master's Degree with Honors in Strategic Intelligence from the American Military University. His next assignment is to the Air Staff at the Pentagon as the Chief of Strategic Intelligence Planning on the A8 staff.

ACKNOWLEDGMENTS

I would like to thank my advisor and reader for their advice and support.

I would also like to acknowledge the professionals at the Air Force Historical Research Agency who patiently found document after document for me and answered the same question many times over.

Finally, thank you to my wife. Your patience with the book-a-day club and throughout my career has made it all possible. I love you.

ABSTRACT

Air intelligence support to Allied Forces during World War II stretched across the spectrum of intelligence. This broad collection of capabilities enabled the intelligence community to support air operations throughout the world in two separate theaters against two distinct enemies. During the Cold War, the intelligence community truncated these intelligence capabilities by focusing on one enemy, the Soviet Union. A majority of air intelligence support focused on finding targets within the Soviet Union and how to get the strike packages into the country. As a result, the Korean and Vietnam Wars caught air intelligence unprepared, with a lack of reconnaissance assets, intelligence professionals, and effective maps. After the Cold War, truncation of intelligence continued, but this time it was due to a lack of strategic direction from the US government and a self imposed generalization of intelligence officer training. This truncation led to intelligence missing indications of the terrorist attacks on 9/11. Currently, air intelligence remains truncated due once again to a focus on a singular target, this time extremist organizations and their efforts against the United States. Ultimately, this truncation may lead to gaps in information on potential enemies such as a nuclear-armed Iran or cyber attacks from China, leaving us unprepared for a future conflict. In order to support a grand strategy effectively, air intelligence must take advantage of a broad spectrum of capabilities.

CONTENTS

Introduction

The Problems of Intelligence

"Upon entering the old entrance of the Central Intelligence Agency headquarters, one will find the following inscription on the left-hand marble wall:
'And ye shall know the truth, and the truth shall make you free.' John VIII-XXXII
It is a nice sentiment, but it overstates and misrepresents what is going on in that building or any other intelligence agency."

Mark M. Lowenthal

Events during the first decade of the 21st century have provided intelligence professionals with several opportunities for self-reflection and criticism. Whenever conversations turn to intelligence and its recent value, the first two things most people think of are the surprise terrorist attacks on September 11, 2001, and the failure of the Intelligence Community (IC) in its assessment that Iraq was building and stockpiling weapons of mass destruction in the lead-up to Operation Iraqi Freedom in 2003. These two incidents triggered the first major overhaul of the American intelligence system since the National Security Act of 1947, which created the Central Intelligence Agency and gave it guidance to coordinate the actions of the various intelligence agencies within the United States Government. The intention of the Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA), an act based on the recommendations of the 9/11 Commission, was to reform the IC and to help break down the stovepipes that had formed between the various organizations responsible for providing intelligence to American policymakers. To do this, organizational changes were required. "The major change made by the IRTPA was the creation of a director of national intelligence (DNI), who supplanted the director of central

intelligence (DCI) as the senior intelligence official, head of the IC, and principal intelligence adviser to the president, the National Security Council (NSC), and the Homeland Security Council (HSC)."[1] The DNI is responsible for breaking down the stovepipes and bureaucratic roadblocks between the various members of the IC in order to increase cooperation and prevent future surprises.

This guidance was based on the 9/11 Commission's view that these interagency stovepipes were responsible for the lack of information sharing between government agencies which, had it been available, could have prevented the terrorist attacks. "Information was not shared, sometimes inadvertently or because of legal misunderstandings. Analysis was not pooled. Effective operations were not launched. Often the handoffs of information were lost across the divide separating the foreign and domestic agencies of the government."[2]

The IRTPA further directs the President of the United States to create an environment conducive to information sharing. "The President shall…ensure that the information sharing environment provides and establishes the means for sharing terrorism information among all appropriate Federal, State, local, and tribal entities, and the private sector through the use of policy guidelines and technologies."[3] By creating an environment of information sharing and cooperation amongst the agencies of the IC, the goal is to provide a single intelligence picture to the policy makers, which will help prevent future terrorist attacks on the United States and our allies.

Information sharing is only one problem area that the IC must address and fix. Unfortunately, it is the area that gets the most attention

---

[1] Lowenthal, *Intelligence: From Secrets to Policy*, 29.

[2] National Commission on Terrorist Attacks Upon the United States, *The 9/11 Commission Report*, (New York: WW Norton & Company, 2004), 353.

[3] Intelligence Reform and Terror Prevention Act of 2004, Public Law 108-458, Sect 118 STAT 3665.

and that we rely on the most to prevent future attacks. Another area, rarely discussed, is the question of where our information is coming from and how we are processing and analyzing it. Are we utilizing all aspects of our intelligence capabilities to their fullest extent? Most importantly, has the United States established a broad set of intelligence capabilities in support of its grand strategy that have the capability to work across the entire spectrum of potential threats?

To address this issue, we must first define what a broad intelligence strategy is. In his book, *The Air War 1939-1945*, Richard Overy examines the various air-related elements of Allied and Axis strategies during World War II. In his view, a broad, or general, air component of strategy was much more effective for England and the United States than the narrowly focused or truncated German and Japanese employment of airpower within their grand strategies. It was this broad approach that enabled the Allies to operate in several theaters, using different aspects of airpower, to defeat two different and very dangerous enemy air arms. "During the war," Overy says, "there developed an explicit dichotomy between those powers that practiced a limited air strategy and those who developed a general air strategy."[4]

Overy emphasizes that, "A general air strategy involved the pursuit of all four of the major aspects of air doctrine simultaneously, while providing sufficient material resources to meet the demands of such a policy. Thus both powers [England and the United States] placed equal emphasis, though not necessarily equal resources, on air defense, strategic bombing, aero-naval cooperation, and air support for ground troops."[5] In contrast, Germany focused predominantly on air support to ground troops, utilizing airpower effectively in their *blitzkrieg* tactics, but ineffectively when it came to strategic bombing, air defense, or naval

---

[4] Richard Overy, *The Air War 1939-1945*, (Washington DC: Potomac Books, 2005), 203-204.

[5] Overy, *The Air War*, 204.

cooperation. Similarly, Japan's focus was on naval cooperation, and neglected strategic bombing, support to ground forces, and air defense.[6]

Ultimately, it was a broad strategy, based on the various aspects of airpower, and the commitment of the governments to stick with the approach, that contributed so significantly to Allied successes. "From the start the British and American governments were committed to a massive exercise of airpower and geared government policy to such an end…From the outset German and Japanese air policy was more cautious…Believing the air forces to be strong enough to achieve victory, neither country prepared adequately for failure. When forced to face powerful air enemies to whom air power was a central military tool, it was too late to regain the initiative."[7]

By taking this approach to the study of the air war during World War II and applying it to intelligence, a similar argument holds for the effective use of a country's intelligence capabilities. Broad intelligence capabilities are just as important to a country's strategic successes as broad ranges of air capabilities. Taking advantage of all aspects of the intelligence trade, whether discussing human intelligence (HUMINT), geospatial intelligence (GEOINT)[8], or any of the other types of intelligence, is imperative to a successful strategy. Revamping the American IC, as discussed earlier, is important, but historically speaking a broad intelligence capability is just as important and usually is not the first thing on reformers' minds.

This thesis approaches the argument that a country requires broad intelligence capabilities to support its grand strategy by looking at three different time periods in American history. Within these, it covers

---

[6] Overy, *The Air War*, 204.
[7] Overy, *The Air War*, 205.
[8] Geospatial intelligence (GEOINT) is the current name for the more commonly known imagery intelligence (IMINT). It includes all aspects of IMINT, but incorporates such aspects of mapping and geodesy. See Chapter 1 for a more thorough description of GEOINT.

American intelligence strategy from an airpower perspective. While acknowledging that there is much more to the IC than just air intelligence, we must nonetheless limit the scope in the interest of space constraints. Readers will find that the focus on air intelligence effectively shows that broad intelligence capabilities lead to the more effective use of airpower, and subsequently, to the effective use of all of the instruments of national power.

World War II marks our point of departure for this assessment of America's intelligence capabilities. During this period, with extensive help from the British, the United States developed and maintained a robust intelligence capability. American intelligence agencies tied their efforts directly to the Anglo-American grand strategy, which was the unconditional surrender of Germany, Italy, and Japan. In order to match this grand strategy, intelligence agencies had to use capabilities across a broad spectrum to provide the best information to support national goals. Capabilities ranged from reconnaissance versions of the P-38 taking photos of German targets, to French resistance fighters working with Jedburgh teams collecting information on German troop concentrations, to signals intelligence (SIGINT) intercepts of German and Japanese diplomatic codes, just to name a few. This broad set of capabilities allowed the United States to create an accurate picture of specific enemy capabilities and intentions.

An assessment of intelligence during the Cold War comprises the second period under review. From 1947 through 1989, the Air Force truncated its intelligence capabilities mix to match the focused strategy of nuclear deterrence as professed by such Airmen as General Curtis Lemay. Airpower's role, according to Lemay and the Strategic Air Command, was initially to deter the Soviet Union from using its nuclear weapons, and if that deterrence failed, to destroy the Soviet Union using long-range nuclear bombers targeting Soviet cities. In response to overall Air Force direction, intelligence efforts focused on three areas: how to

determine if the enemy was initiating nuclear war, where to hit the Soviets, and how to get to the targets. Efforts included IMINT and SIGINT analysts determining the location of Soviet air defenses, while at the same time gathering information on potential targets. Similarly, analysts used IMINT to keep an eye on Soviet forces to determine their state of readiness and whether or not they were about to initiate World War III. Imagery analysts would perform such chores as counting the number of submarines available and trying to locate mobile ICBMs to maintain indications and warning of a possible Soviet attack.

While the Air Force prepared for potential nuclear war, the country fought conventional wars in Korea and Vietnam unlike anything the United States military expected. Instead of massive exchanges of atomic bombs, strikes were limited to non-nuclear weapons and these strikes were not against the expected targets in the Soviet Union. In both the Korean and Vietnam Wars, intelligence was unprepared for the fight that took place. The intelligence focus during the Cold War was on the Soviet Union and its Warsaw Pact. By truncating intelligence capabilities and limiting its focus to the Soviet Union, Air Force intelligence had to play catch-up.

A similar truncation occurred within Air Force intelligence after the Cold War, the final time period assessed in this work. This time, however, the truncation did not result from over-focus on one enemy. Instead, the problem stemmed from a lack of a grand strategy upon which to base an intelligence collection and analysis effort. This lack of focus, coupled with a shrinking budget thanks in part to the "peace dividend," led Air Force senior leaders to cut back on general intelligence capabilities and to generalize the intelligence career field. As a result of this lack of overall strategic direction, both for the country and for the IC, and its profoundly negative effects on the country's aggregate intelligence capabilities, terrorists were able to attack the United States on September 11, 2001, and kill over 3000 Americans. The subsequent war

in Afghanistan and the invasion of Iraq required Air Force intelligence to change once again. Instead of relying primarily on satellite imagery and RC-135s, staples of the Cold War intelligence structure, efforts shifted to Remotely Piloted Systems (RPS) with full motion video paired with SIGINT capabilities and complemented by a rapidly expanding HUMINT capability.

This shift in effort has helped thus far in the fight, but the overall capabilities remain truncated, just focused in a different area. To be prepared for the future, whether it is a cyber war with China or a conventional fight against Iran, Air Force intelligence, and indeed the IC as a whole, must broaden both the range of capabilities throughout the various intelligence fields. Even if some areas are shallower than others, having capabilities that include all areas is the only way successfully to support the nation's grand strategy.

Chapter 1

Intelligence and Its Community

[Intelligence is] the single most effective weapon in our national security arsenal. Whether you're talking about terrorism, weapons proliferation, regional instability, natural disasters, disease, global crime and corruption ... The intelligence we collect, analyze and deliver to policymakers, diplomats ... and military commanders is the basis for decision and action every day.

General (ret) Michael Hayden

Defining intelligence and its various disciplines is an important first step in discussing the development of an intelligence component within any larger strategy. Intelligence is part of the broad category of information; it is just analyzed information applied to a specific policy goal or issue. The transition from information to intelligence comes from analysis and application. The act of taking information and analyzing it with respect to stated policy or military goals and then providing that analyzed information to decision makers creates intelligence. Mark Lowenthal, former assistant director of central intelligence for analysis and production, describes the difference between information and intelligence by stating, "Information is anything that can be known, regardless of how it is discovered. Intelligence refers to information that meets the stated or understood needs of policy makers and has been collected, processed, and narrowed to meet those needs…All intelligence is information; not all information is intelligence."[1] The Intelligence Community (IC) classifies intelligence into five basic categories related to the type of raw information collected and the methods with which it is

[1] Mark M. Lowenthal, *Intelligence: From Secrets to Policy*, (Washington DC: CQ Press, 2009), 1.

collected. These categories are geospatial intelligence (GEOINT), signals intelligence (SIGINT), human intelligence (HUMINT), measurement and signature intelligence (MASINT), and finally open source intelligence (OSINT).

GEOINT

GEOINT is a discipline that has had various titles throughout its history. Formerly called IMINT, PHOTOINT, and even observation, its foundation is in viewing the earth and activity on the earth. The first time a general officer directed one of his soldiers to climb a tree to get a better view of the disposition of the enemy, that soldier was collecting GEOINT. The title "GEOINT" is fairly new and most people still refer to this discipline as IMINT, based on its focus on imagery taken via various sensors.

During World War I and World War II, both sides of the conflict used aircraft to take photographs of enemy lines and potential targets. Once the aircraft landed, photo interpreters developed the film from the cameras and analyzed its contents. This evolved during the Cold War to include digital photographs, taken from satellites and high-flying reconnaissance aircraft and transmitted electronically to the earth for exploitation. The discipline also grew to include infrared (IR) imagery, based on heat reflected or emitted by an object. Military leadership used these Cold War images for treaty verification and for indications and warning of enemy activities.

More recently, GEOINT has expanded to include full motion video (FMV) captured via Remotely Piloted Vehicles (RPVs), which can provide long term pattern-of-life collection to determine common gathering locations, operating areas, and traffic patterns. A final aspect of GEOINT is its collection of terrain or geodetic data. This data is useful in the creation of maps, either digital or hard copy, and also provides information to weapons systems that rely on accurate representation of the terrain for employment.

SIGINT

SIGINT, compared to GEOINT, is a fairly recent development in the intelligence world. "British intelligence pioneered the field during World War I, successfully intercepting German communications by tapping underwater cables."[2] This was the first collection of enemy electronic signals collected and analyzed for intelligence purposes. However, SIGINT is not just the collection of enemy communications. According to the National Security Agency (NSA), the office responsible for all SIGINT activities within the United States Government, SIGINT is, "a category of intelligence that includes transmissions associated with communications, radars, and weapons systems used by our adversaries."[3]

SIGINT can be further broken down into three sub-disciplines. The first, already discussed above, is the collection of enemy communications, also known as COMINT. Enemy communications include radio, telephone, fax machines, and e-mails. Anything that transmits communications across the airwaves is a potential for collection and exploitation. The second area within SIGINT is electronics intelligence (ELINT). This category focuses on the signals emitted from enemy radars or weapons systems. Of interest within these signals are the radar's parameters, which help with the creation of countermeasures, or the location of the radar itself, which enables friendly forces to track, attack, or avoid the system. The final category is foreign instrumentation signals intelligence (FISINT), which includes the collection of data sent from an enemy weapon during testing. Analysts then take this information and use it to determine the success of the test and the capabilities of future enemy weapons.

HUMINT

---

[2] Lowenthal, *Intelligence: From Secrets to Policy*, 90.

[3] NSA Website, http://www.nsa.gov/sigint/index.shtml, (accessed 23 Feb 2010).

Human intelligence is what most people picture in their minds when discussing intelligence. The idea of two spies exchanging information via a dead drop or an operative trying to sneak onto military bases to gather information is a common view of HUMINT, but there is more to it than that. The collection of HUMINT "largely involves sending clandestine service officers to foreign countries, where they attempt to recruit foreign nationals to spy."[4] The information collected from these foreign nationals provides a view into the enemy's mind. This gives analysts an indication of the enemy's intentions, information that is not readily discernable from a satellite image or full motion video.

Another aspect of HUMINT is diplomatic reporting. One of the primary jobs of the defense attaché or the ambassador to a country is to provide information on their host nation. The challenge with diplomatic reporting is that it is overt, meaning the country knows these people are collecting information. The value of the intelligence provided through these means is often of limited value and primarily verifies information collected via other means.

The final aspect of HUMINT is exactly what you might see in a Hollywood movie about James Bond – an actual act of espionage such as stealing documents or emplacing sensors that collect other kinds of intelligence, including IMINT or SIGINT. In the grand scheme of intelligence collection, HUMINT makes up a very small portion of total intelligence gathered, and espionage represents an even smaller amount within the HUMINT discipline.

MASINT

The fourth discipline within the intelligence world is measurement and signature intelligence, which is a relatively new area, especially compared to GEOINT and HUMINT. Many times, a MASINT analyst will perform advanced processing and exploitation of other traditional

---

[4] Lowenthal, *Intelligence: From Secrets to Policy*, 97.

intelligence disciplines. This causes debates about its validity as a separate discipline within the IC. According to a staff study done by the Permanent Select Committee on Intelligence in the House of Representatives, "Although MASINT can be described as the highly technical exploitation of traditional disciplines, the MASINT collection techniques cover areas not addressed by other disciplines. In many respects, there is a clear distinction between MASINT and the other disciplines. MASINT can be considered analogous to the individual who relies on all senses to gain information about his or her environment. Where SIGINT is akin to sound and IMINT to sight, MASINT is akin to touch, taste, and smell."[5]

A MASINT analyst uses other types of intelligence collections, predominantly GEOINT and SIGINT, to develop measurements and signatures that can detect many things, from the movement of enemy troops to the type of gases released from a factory. The recent increase in computer processing capability over the last twenty years has enabled the growth of this intelligence discipline by providing the ability to perform long-term analysis and advanced computer modeling to provide unique information to the IC. Some of this information includes non-cooperative target recognition of aircraft, detection of nuclear radiation, and changes in the acoustic, magnetic, or seismic conditions of an enemy state.

OSINT

The final discipline commonly discussed within the IC is open source intelligence. Often, when people hear a discussion about OSINT, they wonder if it is really intelligence at all. After all, if it is not secret, how can it be intelligence? To answer this we must refer back to the definition of intelligence discussed at the beginning of this chapter.

---

[5] Permanent Select Committee on Intelligence, *IC 21: Intelligence Community in the 21st Century*, (Washington DC: Government Printing Office, 1996), IC21007.

Intelligence is information that has been collected and analyzed with respect to a stated policy goal or issue. Nowhere in the definition does it require that intelligence be of a secret nature. Obviously, large portions of the intelligence collected are at the secret level or higher, but this is to protect sources, which ensures that they are available for future collection and exploitation. Unclassified information is a valuable tool, often used in conjunction with classified intelligence to provide a picture of enemy capabilities or intentions to friendly policy makers.

Sources such as newspapers, radio broadcasts, television shows, or other open media can often times provide indications of what the enemy is doing. Look at the United States for example. Whenever a new military unit stands up or when the Marines deploy to an area of concern, the first reports come from the local newspapers and television channels. An enemy tracking this information can determine easily and with relatively good accuracy, what kinds of forces are going to be involved in a conflict and what capabilities they are bringing with them.

A second source for OSINT is within public data such as government reports, press conferences, speeches, or debates. Again, using the United States as an example, information is available on such programs as the F-22 from the public debates ongoing over the number of aircraft required by the Air Force and approved by Congress. As Department of Defense officials and Congress debate the values of various weapons systems when discussing the Quadrennial Defense Review, insight into the future direction of the US military is readily discernable.

A final area of OSINT is available through professional and academic materials published as part of conferences, symposia, or through such schools as the Air Force's School of Advanced Air and Space Studies. Theses, articles, and studies can provide indications of the areas the military is concerned with or capabilities a specific department is trying to develop. One important source of information on

Chinese military capabilities comes from academic papers published by the various defense-related schools throughout China. These papers can also provide insight into how China thinks about war and its future.

OSINT is a growing capability for the IC. With the explosive growth of the Internet and the opening of previously denied areas such as former Warsaw Pact countries which have since become part of NATO, the ability to collect open information increases. This, however, does not mean that the IC will become less reliant on classified sources. As Lowenthal puts it, "This does not mean that classified collection disciplines are no longer needed, but that the areas in which OSINT is available have expanded."[6]

The Intelligence Community

The next step in developing a broad range of intelligence capabilities to support grand and military strategy is to understand the players with a role in its development. Currently, there are seventeen agencies that make up the United States IC, and these agencies stretch across all levels of the government, dealing with issues ranging from terrorist threats to counternarcotics.[7]

The IC is broken up into three major components, including Program Managers, Departmental Components, and Service Components. The first of these, the Program Managers, are responsible for the overall direction and collection of intelligence. The main player in the Program Manager area of the IC is the Office of the Director of National Intelligence (ODNI). As discussed earlier, the primary responsibility of the DNI is the direction of the IC. This office is not responsible for the collection of any intelligence and does not direct any of the other agencies; its role is to coordinate the community's efforts and to prevent further intelligence failures along the lines of 9/11.

---

[6] Lowenthal, *Intelligence: From Secrets to Policy*, 105.

[7] An overview of the United States Intelligence Community for the 111th Congress, 2009.

Underneath the direction of the ODNI are four sub-organizations created to help with this coordination. They are the National Counterterrorism Center, the National Counterintelligence Executive, the National Counterproliferation Center, and the DNI Special Security Center. Each of these sub-organizations is responsible for the centralized analysis and sharing of information specific to their area of expertise across the IC.

The second of the Program Managers is the Central Intelligence Agency (CIA), created with the passage of the National Security Act of 1947. The initial mission of the CIA was to, "coordinate national security intelligence."[8] Over time, the mission of the CIA expanded to include its own collection capabilities along with its responsibility for coordination. This changed with the passage of the IRTPA in 2004, which diminished the role of the Director of the CIA (D/CIA) and that of the CIA itself within the IC. The D/CIA is no longer responsible for the direction of the IC, a role now delegated to the DNI. Instead, he controls the efforts of the CIA, which now focuses on covert operations and espionage through the National Clandestine Service (NCS), all-source intelligence fusion and analysis in the Directorate of Intelligence (DI), the development of scientific and technical solutions to difficult intelligence problems within the Directorate of Science and Technology (DS&T), and finally support to the other directorates through the Directorate of Support (DS).[9]

The next of the Program Managers within the IC is the Defense Intelligence Agency (DIA). The mission of DIA is to, "Provide timely, objective, and cogent military intelligence to warfighters, defense

---

[8] Aspin-Brown Commission, "The Evolution of the US Intelligence Community – An Historical Overview," in *Strategic Intelligence: Windows Into A Secret World*, eds. Loch K. Johnson and James J. Wirtz, (Los Angeles, CA: Roxbury Publishing Company, 2004), 9.

[9] Central Intelligence Agency, "CIA at a Glance, 12 Dec 2008," https://www.cia.gov/library/publications/additional-publications/cia-at-a-glance/index.html, (Accessed 24 Feb 2010).

planners, and defense and national security policy makers."[10] The Department of Defense established the DIA in 1961 to provide military intelligence support for planning and policymaking within the department and the Joint Chiefs of Staff. The agency also plays a role in the collection of HUMINT through its Directorate of Human Intelligence, which coordinates the efforts of the defense attachés at embassies located throughout the world.

Fourth in the list of Program Managers is the Federal Bureau of Investigation (FBI). The FBI acts as a direct link between the law enforcement community and the IC. Fulfilling its role of security within the borders of the United States, the focus of the FBI is on domestic intelligence activities and threats. Its focus areas are counterterrorism, counterintelligence, and cyber warfare, three areas where threats to the United States are on the rise. Its unique role in both intelligence and law enforcement allows it to deal with both criminal and national security threats, which grow closer every day. This role also allows the FBI to shift from intelligence activities such as surveillance and recruiting to law enforcement activities such as arrest and prosecution of a target if necessary.[11]

The next Program Manager is the National Geospatial-Intelligence Agency (NGA), a Department of Defense Combat Support Agency with responsibilities to provide "imagery and map-based solutions for US national defense, homeland security, and safety of navigation."[12] NGA has the lead within the IC for the production of GEOINT. Formerly called the National Imagery and Mapping Agency (NIMA), legislation created what is now NGA in 1996, after various agencies supported the Dayton

---

[10] Defense Intelligence Agency, http://www.dia.mil/thisisdia/mission.htm, (Accessed 24 Feb 2010).

[11] An overview of the United States Intelligence Community for the 111th Congress, 2009, 7-8.

[12] National Geospatial-Intelligence Agency, https://www1.nga.mil/Pages/Default.aspx, (Accessed 24 Feb 2010).

Peace Accords with imagery and mapping capabilities. The value in the unique combination of mapping and imagery skills used during the November 1995 meetings between warring factions from Bosnia indicated that this area of intelligence was growing and that a single management agency was required to bring together experts in these fields. NGA has since grown to include all aspects of GEOINT collection and analysis.[13]

The National Reconnaissance Office (NRO) is also a program manager within the IC. While originally designated a classified agency of the Department of Defense when created in 1961, the US Government declassified the existence of the office and its mission in 1992. This mission is to "develop and operate unique and innovative overhead reconnaissance systems and to conduct intelligence-related activities essential for US national security."[14] The NRO operates intelligence satellites to provide the US Government with global situational awareness, real-time engagement support, SIGINT and near real time IMINT, agile systems, and access to denied areas.[15]

The final agency within the IC with the title of Program Manager is the National Security Agency (NSA). Established by executive order in 1952 by President Harry Truman, the NSA focuses on SIGINT collection and management for the United States. Its mission is "to protect US national security systems and to produce foreign signals intelligence information."[16] The roots of the NSA reach back to World War II and the SIGINT efforts coordinated between the British and the United States against Germany and Japan. President Truman realized the importance

---

[13] Office of the NGA Historian, *The Advent of the National Geospatial-Intelligence Agency*, (Dayton, OH: Office of Corporate Relations, 2007), 1-2.

[14] National Reconnaissance Office, "NRO Factsheet 2007," http://www.nro.gov/NRO_Fact_Sheet.pdf, (Accessed 25 Feb 2010).

[15] NRO Factsheet.

[16] National Security Agency, http://www.nsa.gov/about/mission/index.shtml, (Accessed 24 Feb 2010).

of this capability and the effects it had on the outcome of the war, and determined that the country needed an organization to continue these efforts against the Soviet Union during the Cold War. By establishing the agency under the Department of Defense, President Truman assured a lasting relationship between the civilian SIGINT community and the military operators who collect and analyze the same information.

The remaining members of the intelligence community are not responsible for the coordination of any of the major intelligence disciplines. Instead, these intelligence organizations are predominantly analysts who fuse all-source intelligence specifically for their parent organizations, while potentially collecting intelligence under the guidance of the program managers. The second major section of the Intelligence Community, called the departmental components, consists of the intelligence organizations within various cabinet offices. These organizations are the Office of National Security Intelligence within the Drug Enforcement Agency, the Office of Intelligence and Counterintelligence from the Department of Energy, the Office of Intelligence and Analysis within the Department of Homeland Security, the Bureau of Intelligence and Research from the Department of State, and finally the Office of Intelligence and Analysis within the Treasury Department. Each of these organizations is responsible for tailoring the available intelligence to the interests of their organizations, and sharing any information they gather with other members of the intelligence community.

The final group within the Intelligence Community is the service components and the assets and analysts within the various armed services. The Army, Navy, Air Force, Marine Corps, and Coast Guard each maintain intelligence organizations that focus specifically on the intelligence required for successful mission accomplishment. Each of the services also manages an intelligence center, which focuses on analysis and exploitation of enemy weapons system capabilities. Within the

Army, the National Ground Intelligence Center is the nation's leader in ground-focused intelligence such as tanks, AAA pieces, and artillery. The National Air and Space Intelligence Center is the Air Force's organization responsible for providing technical intelligence on enemy aircraft, airborne radar, and missile systems. The Navy hosts the Office of Naval Intelligence, which focuses on surface, sub-surface, and mine threats to friendly naval assets. The Marine Corps Intelligence Activity provides expeditionary warfare intelligence to national, theater, or operational command within the US Armed Forces. Finally, the Coast Guard, in its unique dual-mission role of law enforcement and armed service, maintains the Coast Guard Intelligence and Criminal Investigations Program, which blends intelligence required for both military and law enforcement activities.

Each member of the IC provides a unique view of the intelligence available to the United States and each has a voice in the overall system of policy and decision-making. Much like the overall system of checks and balances that the Founding Fathers built into the United States Government, no member of the intelligence community has complete control over what information gets to the President. The DNI is responsible for coordinating the efforts of the various intelligence collectors and analysts and is the President's lead intelligence advisor, but he is not able to direct any of the organizations' efforts or control the intelligence they collect. Each agency takes all available intelligence, forms conclusions based on their various roles within the US Government, and is able to provide the President with its assessments. Despite the fact that it refers to American intelligence prior to the passage of the IRTPA and the role of the CIA prior to the ODNI taking charge of the Intelligence Community, the following quote from Michael Warner still provides an accurate description of the role of rivalry and friction within intelligence. "This prescription of coordination without control guaranteed friction and duplication of intelligence efforts as the

CIA and the departmental agencies pursued common targets, but it also fostered a potentially healthy competition of views and abilities."[17]

Policy and Operations

A final step in the discussion of a broad set of intelligence capabilities, after defining intelligence and the agencies that deal with it, is determining what role intelligence should have with respect to policy and operations. The first topic is usually the more contentious of the two because policy makers rely on accurate intelligence to determine and implement national strategy. Should intelligence be inaccurate or incorrect, which it often is since no system or person is perfect, the effects can be damaging. However, when intelligence is accurate and used effectively, the benefits outweigh the risks, and proper decisions are possible.

Most policy makers look at intelligence as a tool used to help make informed decisions. "…nearly all governments around the globe engage in intelligence in one way or another. They do so because they want to know what other governments are up to, and because they want to be able to be in a position to influence the behavior of other governments toward them."[18] With knowledge of foreign capabilities or intentions, a government will be much better prepared to deal with the intricacies of international relations.

There are two primary problems with intelligence when it comes to policy and decision-making. The first, as implied above, is that intelligence is not perfect. Often the over-used buzz phrase, "We don't know what we don't know" is accurate. If a country is able to keep a capability or opinion secret, then there is no way an intelligence system

---

[17] Michael Warner, "Central Intelligence: Origin and Evolution," in *Intelligence and the National Security Strategist*, eds. Roger Z. George and Robert D. Kline, (Lanham, MD: Rowman and Littlefield Publishers, 2006), 45.

[18] Michael A. Turner, *Why Secret Intelligence Fails*, (Washington DC: Potomac Books, 2006), 7.

will be able to predict its effects. Unfortunately, intelligence analysts do not have a crystal ball available to predict the future. Military theoretician Carl von Clausewitz touched on this point in his book *On War*, when he stated, "Many intelligence reports in war are contradictory; even more are false, and most are uncertain…In short, most intelligence is false."[19] Similarly, when dealing with humans, logic as we understand it within our culture might not be part of the equation since "logic" of any sort is a product of the rationality governing an individual or group's patterns of thought. Even if all indicators point towards a particular decision, the human factor can defy our concept of logic, with the adversary going in a completely unexpected direction.

The second problem with intelligence is that the relevant portions of it must get to the right person who then has to act correctly. In many cases, neither occurs. As Roberta Wohlstetter discussed in her book *Pearl Harbor: Warning and Decision*, determining what is relevant and what is not is a challenge for all intelligence systems. "If our intelligence system and all our other channels of information failed to produce an accurate image of Japanese intentions and capabilities, it was not for want of the relevant materials. Never before have we had so complete an intelligence picture of the enemy. And perhaps never again will we have such a magnificent collection of sources at our disposal."[20] The problem was separating the important information out from the noise of the irrelevant and then acting on it.

Even if we have a complete picture of enemy capabilities, the person receiving the intelligence still must act upon it. Michael Herman, a British intelligence scholar, makes the point that decision makers can make the wrong decisions even with perfect intelligence on the situation.

---

[19] Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret, (Princeton: Princeton University Press, 1984), 117.

[20] Roberta Wohlstetter, *Pearl Harbor: Warning and Decision*, (Stanford, CA: Stanford University Press, 1962), 382.

"In short," he says, "there are no clear wiring diagrams for the connections between intelligence items and specific action. Intelligence may be ignored…If intelligence is used, users consciously and unconsciously *select* from what is presented to them. Even diligent users who pay attention to everything interpret intelligence's careful expressions of uncertainty and alternatives in the light of their own prejudices."[21] A user's bias and beliefs about the situation can color ways in which he or she interprets available intelligence. Many times, leadership will accept intelligence that supports their plan, while ignoring the portions that indicate their plan might fail.

At the strategic level, intelligence should inform policy makers' decisions. Ideally, these leaders have an open mind and are willing to accept the intelligence as part of the decision-making process. To ensure that they receive the best intelligence possible, policy makers must provide direction to the IC. The various intelligence agencies work hard to collect on all areas of interest to the administration, but unless they know what these areas are, they will not be successful.

The IC, however, cannot just be reactive to policy makers' guidance. Instead, they also play a proactive advisory role. This role is based on the fact that new information may appear on a threat that is not of current concern. Intelligence then informs decision makers of a potential area they must deal with and advises them on possible courses of action. Essentially this relationship is a two-way street. Policy makers provide guidance to the IC concerning what to look for, and the IC provides indications of new areas of concern for the policy makers.

The relationship between leadership and intelligence at the operational level of war is similar to that at the strategic level, but the

---

[21] Michael Herman, "Intelligence and National Action," in *Strategic Intelligence: Windows Into A Secret World*, eds. Loch K. Johnson and James J. Wirtz, (Los Angeles, CA: Roxbury Publishing Company, 2004), 226.

timeframe is much shorter. Changes in enemy disposition or capabilities at the operational level often have an immediate effect on the outcome of the battle. As such, the relationship between operations and intelligence must be more of a partnership than that seen at the strategic level. According to a 1942 training document from the Army Air Forces Intelligence School called *The Group and Squadron S-2*, "The principal and most important duty of an S-2 is: TO PREVENT HIS COMMAND FROM BEING SURPRISED. The intelligence officer should consider himself the voice of conscience continuously whispering into the Commander's ear the warning, which a prudent man cannot afford to ignore [emphasis in original]."[22] By working together, intelligence and operations will be more effective in the defeat of an enemy. If intelligence becomes a secondary consideration and is only there to support the operations side of the effort, the overall effectiveness of the operation will diminish.

The next chapter, on intelligence during World War II, explores the increased effectiveness that often derives from a broad set of intelligence capabilities and a partnership between intelligence and operations. The American reliance on all aspects of its intelligence capabilities, with assistance from the British Intelligence Community, was a key contributing factor to the overall success of operations in both the European and Pacific Theaters. These broad intelligence capabilities, along with a well-established partnership between intelligence and operations, allowed Allied airpower to play a vital role in the defeat of the Axis Powers.

---

[22] US Army Air Forces, *Group and Squadron S-2*, (Harrisburg, PA: Army Air Forces Intelligence School, 1942), 3.

Chapter 2

World War II – Doing it Right

In another form of passive resistance, namely intelligence gathering, resistance forces were more successful, providing information that was timely and/or precise. An example of the precision of this information includes that collected on Adolf Hitler and his daily routine. By June 1944 "Section X" of the SOE had compiled the details of Hitler's routine at his retreat at Berghof down to the time of his breakfast and the path of his morning constitutional.

James D. Kiras

Despite initial challenges and difficulties, the combined efforts of the American intelligence agencies and their British counterparts are a good example of the effectiveness of a broad set of intelligence capabilities in supporting the development of grand and military strategy, and in speeding Allied victory at a lower cost in blood and treasure. This chapter discusses these issues. It then provides several examples of the effective collaboration between intelligence and operations in efforts to defeat not only the German threat in the European and Mediterranean Theaters, but also the Japanese in the Pacific Theater. The ultimate goal is to provide a baseline that describes the attributes of an effective and broad Allied intelligence capability from which to compare the Cold War and post-Cold War intelligence strategies.

Unconditional Surrender

The announcement on 24 January 1943 by Allied leadership that they would accept nothing less than the unconditional surrender of Germany, Japan, and Italy to end World War II was a controversial move made for multiple reasons. First, it was meant to assure the victims of Axis aggression that the Allies would continue fighting and that they knew their enemies were "involved in the most horrendous persecutions

and atrocities."[1] Second, the Allies did not want to forget the lessons from the end of World War I where the war ended in an Armistice that "facilitated the creation of the German stab-in-the-back legend which pretended that Germany had not been defeated in World War I at all. This time there was to be no confusion after the war as to whether or not the German army had been beaten."[2] Finally, Roosevelt and Winston Churchill made the announcement to reassure allies, such as Stalin's Russia, that the Western Allies would not abandon them in their fight against Germany, despite the fact that there would be no cross-Channel invasion into France in the near future.

From an intelligence perspective, the demand for the unconditional surrender of the Axis powers created a daunting task. How could Allied intelligence agencies gather enough information, analyze it, and provide the finished intelligence to the policy makers and operators to enable the successful achievement of this goal? How could they determine enemy intentions and capabilities? What would be the best way to work closely with operations to ensure that Allied efforts focused on the areas providing the best returns?

The answer to these questions came in the announcement that spurred them. By demanding unconditional surrender, Roosevelt and Churchill reaffirmed publicly that their countries were engaged in a war for national survival. This would take the mobilization of all aspects of society for the Allies to be successful. Not only would the militaries of both sides be completely engaged in the fight, but the societies had to join the fight as well. Intelligence agencies had to glean much more information about the enemy from available sources and therefore had to recruit experts from within civilian society itself. Focusing on the military aspect alone would not provide the information necessary to

---

[1] Gerhard L. Weinberg, *A World at War: A Global History of World War II*, (New York, NY: Cambridge University Press, 1994), 438.
[2] Weinberg, *A World at War*, 439.

defeat Germany and its allies. Instead, a broad effort was required to gather information not only on the capabilities of enemy tanks or aircraft, but also on the German and Japanese societies. Planners required intelligence on the locations of enemy factories; but beyond the locations, they also had to know how particular industries worked together in their efforts to support the army. As John Kreis has noted, "In pursuing the Allies' World War II military aims, strategic air intelligence analysts attempted to identify German, Italian, and Japanese war-making resources that could most effectively be attacked by a limited strategic bomber force."[3] If intelligence analysts could identify strategic targets that would help bring the German war effort to a halt, then the war could end sooner than anyone had previously hoped.

The problem was that very little of the Intelligence Community (IC) that we rely on today existed in the early 1940s. There was no overall centralized organization responsible for the collection and dissemination of intelligence to the policy makers. At the service level, the US Army and Navy both had intelligence organizations within their structures, but, as would be expected, they focused on ground and naval intelligence respectively. These agencies did little work on enemy society or industry and how the two worked together to drive the enemy war effort. David MacIsaac makes this point when he states, "The information available to guide the planners in the selection of target systems was utterly inadequate. Accordingly, from the very beginning of operations some means would have to be found to measure both the results achieved and the assumptions upon which plans had been drawn up."[4]

---

[3] John F. Kreis, *Piercing the Fog: Intelligence and Army Air Forces Operations in World War II*, (Bolling AFB: Air Force History and Museums Program, 1996), 2.

[4] David MacIsaac, *Strategic Bombing in World War Two*, (New York, NY: Garland Publishing, 1976), 22.

One attempt to quantify these results and assumptions was the United States Strategic Bombing Survey (USSBS) accomplished by The War Department at the end of World War II. The intent of the USSBS was to determine how effective strategic bombing was for the Allies and to help identify areas where improvement was required to prevent repeat errors should the United States find itself in another war. Regarding air intelligence, its findings are similar to those of MacIsaac quoted above. "After Pearl Harbor, the obtaining and analysis of economic and industrial information necessary to the planning of an attack on Japan's sustaining resources required several years of the most strenuous effort and even then substantial gaps remained."[5]

The Americans were starting from scratch with their air intelligence capability. The British, on the other hand, had been at war for several years when the United States declared war on Germany and Japan, and had created an intelligence system to gather information on Germany and Italy. The Americans relied heavily on British experiences to establish an intelligence capability broad enough to cover an entire world.

Support from the British

The initial cadre of American intelligence analysts to join the British in the spring of 1942, "were woefully undertrained by British standards, but they also proved to be quick studies capable of integrating into British air intelligence organizations."[6] This eagerness to learn and the British willingness to teach were keys to the two groups forming a broad intelligence capability that could support operations throughout World War II. For the early portions of the war, when the

---

[5] United States Strategic Bombing Surveys (Pacific War), (Maxwell AFB, AU Press: 1987), 117.

[6] Robert Ehlers, *Targeting the Third Reich: Air Intelligence and the Allied Bombing Campaigns*, (Lawrence, KS: University Press of Kansas, 2009), 134.

only operations either country was able to throw at Germany were strategic bombing operations, this cooperation necessarily focused on air intelligence. Again, luckily for the US Army Air Forces (USAAF), the British had already established capabilities in this arena. The Americans had to catch up fast both in size and in training. "The War Department's General Staff G-2, or Army Intelligence, also fulfilled AAF intelligence needs. The G-2 office had expanded from 22 people in 1939 to 500 in 1941. With such rapid growth, few on the G-2 staff were proficient in intelligence work."[7]

British and American cooperation stretched across the broad intelligence strategy that developed to defeat Germany and Japan. The two nations worked together in all aspects of intelligence "from signals, to cryptanalysis, to photoreconnaissance, to the resistance networks, and to economic analysis."[8] This relationship developed quickly and lasted throughout the war and beyond. "From the beginning, cooperation between Eighth Air Force's growing intelligence organization and the Royal Air Force's (RAF) already well-organized and skillful intelligence effort was close and fruitful, remaining so to the end of the war."[9]

Getting to Know Enemy Capabilities

Allied cooperation within the various intelligence disciplines, as described in Chapter 1, allowed the two nations to focus on three critical aspects of the enemy. These three aspects were the enemy's force capabilities, industrial capacity, and operational plans. Put simply, these addressed what forces the enemy had, how many weapons the enemy could make, and what he was planning to do with them. This list is not exhaustive with respect to the enemy, but it does provide three general areas within which the Allies focused many of their intelligence activities. As Richard Overy states, "Overall strategy was, for example,

---

[7] Kreis, *Piercing the Fog*, 3.
[8] Kreis, *Piercing the Fog*, 402.
[9] Kreis, *Piercing the Fog*, 403.

dependent on an assessment of what an enemy was producing and hence what an enemy air force would be operationally capable of."[10]

Intelligence analysts focused a large portion of their efforts in late 1943 and early 1944 towards determining enemy capabilities in the Normandy region as part of the Allied preparations for D-Day. This intelligence effort, working in concert with allied attacks as part of the transportation campaigns against German rail, canal, and road traffic, revolved around multiple intelligence disciplines. Intelligence analysts provided planners with information key to preparations for the OVERLORD invasion and subsequent operations once the Allies established themselves on the continent once again.

The intelligence discipline that formed the backbone for analysts attempting to determine the effectiveness of the transportation campaign was PHOTOINT, now commonly called GEOINT. Images taken by Allied reconnaissance aircraft identified targets such as bridges and railroad switching centers in an attempt to prevent the German Army from reinforcing and resupplying units already stationed in the Normandy area. In this sense, "Photographic reconnaissance remained the primary source for monitoring static targets such as bridges, marshalling yards, and airfields. Hundreds of reconnaissance missions had pinpointed virtually every useful target within the German transportation system. As these targets became the focus of air attack, aerial reconnaissance and agent reports were the main sources of information on specific attacks and constituted the means to determine when reattacks were necessary."[11]

Another area of intelligence that provided information to analysts working on the transportation campaign was SIGINT. While GEOINT provides indications of damaged vehicles and destroyed buildings,

---

[10] Richard Overy, *The Air War 1939-1945*, (Washington DC: Potomac Books, 2005), 197.

[11] Kreis, *Piercing the Fog*, 226.

SIGINT can provide insight into the psychological effects that a campaign has on the enemy. The primary Allied source of strategic SIGINT against Germany was ULTRA, a codename given to the intelligence gathered by Allied sources on the German encryption machine called Enigma. Within the transportation campaign, ULTRA provided indications of the effects that Allied bombing was having on the operational capabilities and morale of German forces. "ULTRA messages confirmed that American fighters were causing the Germans difficulties as they attacked airfields and aircraft landing and taking off. ULTRA confirmed that the American air offensive was also causing desperate shortages of pilots, parts, and supplies in the enemy fighter forces."[12]

A third intelligence discipline used extensively to determine enemy capabilities once again focused in the area surrounding the Normandy landings. HUMINT teams operating throughout France were an important source of intelligence, not only for post-strike damage assessment but also for identifying future potential targets. To accomplish this, the British used Special Air Service (SAS) teams working with members of the French resistance known as the Maquis. Eventually, the Americans also participated in this effort by sending in teams of operatives from the Office of Strategic Services (OSS) called Jedburgh teams. Each of these teams was given the mission to, "attack trains, truck convoys, vehicle parks, and supply depots, and to report on enemy troop movements and the effects of air attacks."[13]

To provide this needed intelligence in a timely manner, each team carried a secure radio, which they could use to communicate back to England. Eighth Air Force and British Bomber Command used the information provided by these teams was to plan future bombing missions. "From the outset, bombing and special operations were closely

---

[12] Kreis, *Piercing the Fog*, 409.
[13] Ehlers, *Targeting the Third Reich*, 231.

connected through the targeting-bombing-assessment feedback loop."[14] This process of target identification through assessment provided one of the key intelligence successes during the preparations for OVERLORD: the targeting of the French canal system. "Their [SAS] recent discovery that the Germans were using canals by night to move troops and supplies into Normandy resulted not only in SAS actions such as this one [the destruction of Seine River locks], but also in belated bombing of canal locks and other infrastructure, with SAS teams advising airmen when large barges were fully loaded and hence lucrative targets. Eyes on the ground allowed intelligence personnel to focus on an important target set they had missed altogether in preinvasion analyses."[15]

Determining Enemy Industrial Capacity

This close cooperation between a broad intelligence strategy and actions at the operational and tactical levels enabled the destruction of thousands of vehicles and millions of gallons of fuel. The overall effect of the transportation campaigns, both in the Normandy area and throughout German territory was, according to the USSBS, "the decisive blow that completely disorganized the German economy. It reduced war production in all categories and made it difficult to move what was produced to the front. The attack also limited the tactical mobility of the German Army."[16]

The USSBS, written in the months surrounding and following the end of the war, provided insight into the overall effects that the strategic bombing campaign had against the German and Japanese economy. It was a review of what bombers accomplished during the early stages of strategic attacks against Germany with a secondary goal of determining what kinds of effects strategic bombing could have on Japan. Its effects

---

[14] Ehlers, *Targeting the Third Reich*, 231.
[15] Ehlers, *Targeting the Third Reich*, 232.
[16] United States Strategic Bombing Surveys (European War), (Maxwell AFB, AU Press: 1987), 30.

would also be far reaching with respect to the future role of the USAAF. According to Brigadier General Laurence Kuter, the Assistant Chief of Staff for Plans and Combat Operations, "The overall benefits to be derived from such a survey are multiple, but two are of primary importance; first, the knowledge gained would be of invaluable assistance in our aerial offensive against Japan and second, our entire future air policy might well be determined from the committee report."[17]

The efforts involved in the creation of the USSBS grew from a process started several years earlier by the USAAF to determine the overall capabilities and weaknesses of the German and Japanese economies. Strategic intelligence played a large role in determining how enemy industries worked and where there were targetable weaknesses, which, when struck, might halt the German and Japanese war machines. USAAF intelligence personnel knew they did not have the expertise required to find and exploit these weaknesses. In an attempt to fix this, they turned to willing civilian experts with experience relating not only to American, but also German industry.

According to Gian Gentile in his book, *How Effective is Strategic Bombing?*, "Strategic air intelligence on major world powers would demand an intelligence organization and analytical competence of considerable scope and complexity."[18] To remedy the lack of expertise within the AAF, "The fledgling Air Intelligence Section of the AAF was one of the first agencies that brought in civilian experts to work on strategic target selection and evaluation."[19]

Two intelligence disciplines, OSINT and HUMINT, played large roles in the collection of information on the German and Japanese economies.

---

[17] Quoted in *Strategic Bombing In World War Two*, by David MacIsaac, (New York, NY: Garland Publishing, 1976), 38.
[18] Gian Gentile, *How Effective is Strategic Bombing?*, (New York, NY: New York University Press, 2001), 18.
[19] Gian Gentile, *How Effective is Strategic Bombing?*, 19.

A handful of US and British agencies collected and analyzed a majority of the economic and industrial information gathered through these two disciplines. Within the USAAF, the lead office was the Target Information Section (TIS) of the office of the Assistant Chief of Air Staff, Intelligence. "As far back as the spring of 1940… [it] had begun to compile 'air intelligence' relating to the industrial structures of Germany, Italy, and Japan."[20] Working with the TIS was the Military Intelligence Division of the War Department, the Research and Analysis Section of the OSS, the Foreign Economic Association, and the British Ministry of Economic Warfare, among others.[21] These agencies all sought information through both open sources and other covert methods on the enemy economies.

From a HUMINT perspective, the offices of the ambassadors and defense attachés in the various enemy countries were a good source of information on both the enemy economy and the general feelings of the government and people of the enemy countries. According to General Sherman Miles, the Chief of Military Intelligence for the Army, "The most important source for information on Japan was Ambassador Grew's embassy in Tokyo and the reports that he sent to the State Department. These reports, to which Miles claimed he had access, 'related almost exclusively to the state of mind of the Japanese people toward the war and their enmity toward the United States."[22]

In an attempt to gather as much information as possible and to fill the intelligence gaps on enemy capabilities, all agencies developed creative ways to get what they needed. Various books, newspaper articles, and periodicals provided basic information on the German economy, and many American intelligence specialists spoke German well enough to translate the information they needed from these German

---

[20] David MacIsaac, *Strategic Bombing in World War Two*, 23.
[21] David MacIsaac, *Strategic Bombing in World War Two*, 23.
[22] Roberta Wohlstetter, *Pearl Harbor: Warning and Decision*, (Stanford, CA: Stanford University Press, 1962), 284.

open source documents. "From the beginning ingenuity was the order of the day and among the 'many devious channels through which this search led' were the vaults of certain New York banks where detail drawings of many German factories were found."[23]

A final group of experts tapped to provide insight into the enemy economy and its industries was the Committee of Operations Analysts (COA). This group of men, made up of military members, scientists, historians, economists, and lawyers was brought together to provide systematic analysis of the target information gathered on the enemy. "In addition to already completed studies and collected materials, the subcommittees [of the COA] called upon industrialists, economists, and financiers from America and abroad with expertise in key industries. In several instances, these men had actually operated factories in the targeted industries in Europe and Africa."[24]

Planners within the USAAF and Royal Air Force used all of the information gathered by these agencies on the enemy economy and the industries that power it to determine the most lucrative targets to strike with a busy bomber force. The broad intelligence strategy established by the Allies permitted the collection of information that had never been required before. By spreading the efforts of the various intelligence agencies across all aspects of the intelligence world, to include areas never before explored, the Allies effectively gathered information on their opponents' war machines, and used it to drive friendly war plans.

Figuring Out Enemy Plans

The final and most important area of interest for Allied intelligence was determining how the enemy's operational plans fit within their strategic plans. Knowing about German, Italian, and Japanese force capabilities, economies, and industries was critical, and this intelligence

---

[23] David MacIsaac, *Strategic Bombing in World War Two*, 23.
[24] Kries, *Piercing the Fog*, 153.

fully supported the Allies' overall war plans, but knowing the enemy's plans allowed friendly forces to pinpoint where to focus their efforts in an attempt to defeat the Axis forces in a rapid manner. The primary source of intelligence on enemy plans was SIGINT, covered at the strategic and operational level under the code name ULTRA and collected at the tactical level by the Y-service. The focus of the Y-service was on the interception of tactical level radio communications. These capabilities provided intelligence analysts with information on force movements throughout both theaters of war. "It was the Y-Service that tracked virtually every aircraft movement. This information guided photoreconnaissance missions that, by confirming the arrival of enemy units at rear bases, provided the information necessary to direct attacks on these installations."[25]

In the European theater, the primary target of ULTRA was the German Enigma machine, used throughout Germany to secure a majority of their communications. "By the beginning of World War II, each of the branches of the German military, the policy, the railway, civilians, and the Nazi Party were using their own variations of Enigma."[26] As for the Pacific theater, the primary targets were the Japanese "Purple" diplomatic codes, which the Magic program sought to break.

The SIGINT provided under the ULTRA program, both in the European and Pacific theaters, helped Allied planners to determine what moves to expect from Germany and Japan and then enabled them to formulate friendly plans to defeat them. One of the most successful practitioners of this combination of intelligence and operations was General George Kenney, operating in the Southwest Pacific Area of the Pacific theater. General Kenney, the air commander for General Douglas

---

[25] John Kreis, *Piercing the Fog*, 175.

[26] R.A. Ratcliff, *Delusions of Intelligence: Enigma, Ultra, and the End of Secure Ciphers*, (New York, NY: Cambridge University Press, 2006), 2.

MacArthur, effectively used intercepted Japanese radio signals to plan attacks and to defend friendly forces in his operating area. "In short, this intelligence advantage allowed Kenney to concentrate his air forces, both offensively and defensively, when and where they would have the greatest effect on Japanese operations."[27]

One example of Kenney's use of intelligence to impede Japanese operations started out as a tactical radio intercept that the Japanese commander in Rabaul intended to run a convoy to Lae in New Guinea, but eventually became the Battle of the Bismarck Sea. If this convoy, and the 6900 soldiers it carried, reached Lae, it could spell defeat for the Allied forces operating on the island and push friendly lines back to Australia and potentially out of the fight in the Pacific theater.[28] "Kenney's intelligence organization, which included a large number of Australian officers, spent a great deal of time carefully plotting the pattern of Japanese shipping and cataloging signs of an impending convoy."[29]

On 1 March, the crew of a B-24 saw the convoy for which Kenney and his crews had been preparing. "The next day, a series of high- and low-level attacks by the Americans and Australians, followed by Navy PT boats, destroyed the Japanese ships. Kenney…had hit the convoy exactly where they had planned."[30]

Kenney and his team used SIGINT to pick the target, the time, and the place to hit the Japanese the hardest. According to Kenney himself, "The Battle of the Bismarck Sea was not something that just happened. We didn't just see the convoy coming and go out and hit it. It was planned and rehearsed. We prepared. We even picked the spot for the

---

[27] Thomas E. Griffith, Jr., *MacArthur's Airman: General George C. Kenney and the War in the Southwest Pacific*, (Lawrence, KS: University Press of Kansas, 1998), 245.
[28] Kreis, *Piercing the Fog*, 265.
[29] Griffith, Jr., *MacArthur's Airman*, 101.
[30] Kreis, *Piercing the Fog*, 267.

engagement."[31] "The ability to read Japanese messages allowed Kenney to concentrate his forces at the appropriate place and optimum time to have the greatest impact. In modern terms, this intelligence was a 'force multiplier.'"[32]

A final example of the use of SIGINT to thwart enemy plans is also one of the most controversial uses of intelligence during World War II. On 14 April 1943, a radio intercept of a Japanese message indicated that Admiral Yamamoto, the Japanese Combined Fleet's Commander in Chief and chief planner for the attack on Pearl Harbor, intended to visit his forces in the northern Solomon Islands. Part of this intercept included the travel itinerary of the Admiral's contingent of aircraft, which included two Mitsubishi Betty bombers and six Zero fighters. Admiral Chester Nimitz determined that this was too good an opportunity to pass up and authorized the intercept of the Japanese aircraft by sixteen American P-38 Lighting fighters.[33]

Four days after receiving initial indications of the Admiral's plans, the American planes successfully found the Admiral's aircraft and its escorts and shot down the bomber carrying Yamamoto, killing him. "The successful ambush of Yamamoto later became one of the most highly publicized incidents of the Pacific war. This action also endangered America's ability to read Japan's encrypted message traffic. Virtually everyone involved in the killing of Yamamoto…came to know the source of the information…Had the story reached Japan from any source, and had the Japanese realized its significance, they could have altered their radio transmission practices and foreclosed an extremely valuable Allied insight into their planning."[34] This tactical use of intelligence to shoot down an enemy aircraft obviously had strategic impact. By killing

---

[31] Griffith, Jr., *MacArthur's Airman*, 108.
[32] Griffith, Jr., *MacArthur's Airman*, 101.
[33] Kreis, *Piercing the Fog*, 270.
[34] Kreis, *Piercing the Fog*, 270.

Japan's top Naval Admiral and arguably their most creative operational planner, the Allies severely weakened their enemies' overall capabilities.

The Role of Broad Intelligence Capabilities

Allied forces faced a daunting task at the start of World War II. Not only were they facing a massive land-centric battle along the Eastern Front, they were fighting an air war over Europe that eventually grew to include massive bomber raids with thousands of aircraft participating and a naval war against Japan that stretched over thousands of miles of ocean. The desired outcome of these battles, according to President Franklin Roosevelt, was the unconditional surrender of Germany, Italy, and Japan. To achieve this grand strategy, Allied military forces had to be prepared to fight throughout the world using intelligence focused on all levels of war. Analysts derived information on the enemy, whether in terms of force capabilities, economic capacity, or operational plans, from all disciplines of intelligence.

PHOTOINT analysts determined the location and capabilities of enemy forces throughout the European and Pacific theaters. SIGINT, in the form of radio intercepts and decrypted enemy diplomatic messages provided insight into enemy plans and the effects of allied efforts on adversary capabilities and morale. HUMINT identified targets, passed battle damage assessment to planners, and gave diplomats indications of enemy civilian morale. Last, but not least, OSINT was used to gather intelligence on a target not seen prior to World War II, the enemy economy and the industries that fuel it. Each intelligence discipline worked across all levels of the war, from the grand strategic down to the smallest tactical details.

According to Sir Harry Hinsley, British academic and member of the British Government Code and Cipher School at Bletchley Park during World War II, "The war effort of the Western Allies on every front after the end of 1941 was guided by massive, continuous and frequently current information about the enemy's dispositions, intentions, resources, and

difficulties… This enabled them not only to strike some decisive operational blows and avoid some operational setbacks, but also to shorten the war by setting the time, the scale and the place of their own operations in such a way as to achieve enormous economies for themselves in lives and resources and to add enormously to the burdens the enemy had to bear."[35]

[35] Sir Harry Hinsley, "The Intelligence Revolution: A Historical Perspective," (Harmon Memorial Lecture, US Air Force Academy, 12 Oct 1998).

Chapter 3

Truncated Cold War Intelligence

The concept of the 1950s was that the Korean conflict reflected air intelligence requirements for a tactical air war reminiscent of World War II, whereas the major threat to the United States would be nuclear war…At the USAF level, the major function of air staff intelligence became national-level warning and threat indications assessment, an indication being defined as "any betraying activity or manifestation on the part of an enemy that may point toward his intended course of action."

Robert Futrell

Truncating one's intelligence capabilities is typically not a conscious decision made by a country's leadership. Certainly, if the policy makers know what is good for their national security, they would do everything they can to maintain these broad capabilities to inform their decisions and identify future adversaries. However, this is often not the case. Truncation can occur in multiple ways, but three of the most common are through focusing one's efforts on a single adversary, relying solely on one discipline for a majority of one's intelligence, or using the nation's intelligence capabilities to support only one military force.

During World War II, both of the major Axis powers committed the third act of truncation of their intelligence strategy. Germany's focus after World War I was on how better to operate within a land campaign to defeat the French and British armies. As such, they conducted a majority of their activities, both overt and covert, to support the *Wehrmacht* and its attempts to modernize and prepare for another confrontation with France. These efforts eventually became Blitzkrieg warfare, designed to infuse mobility into the army and to rapidly strike at enemy concentrations. The Luftwaffe focused its primary efforts on supporting the army and its new mode of warfare and this forced their intelligence focus in a similar direction. "The Germans gave intelligence,

particularly long-term, strategic intelligence, and cryptanalysis, a low priority reflected by limited resources and fractured intelligence organizations."[1]

Japan also truncated its intelligence strategy in support of one portion of its armed forces, this time the Navy. The Japanese also had to deal with a much larger theater of war than did the Germans and this changed their focus drastically. Prior to the beginning of World War II, no country had the ability to conduct long-range strikes over the Pacific Ocean, much less resource strapped Japan. The only option for power projection against the United States was through the Japanese Navy and therefore the country focused its efforts in that direction. This eventually limited Japanese capabilities in providing information on the United States. "In the Far East, such intelligence had been satisfactory enough for the preliminary stages of war preparation, but the rapid deterioration of Japanese air power and the failure to develop reconnaissance aircraft of sufficient speed or height made it difficult to acquire not only long-range strategic information but even tactical information about American intentions."[2]

For the United States, the truncation of our intelligence strategy occurred after World War II. During the Cold War, America's attention turned almost exclusively to a single adversary, the Soviet Union, and a majority of the efforts of the newly formed Intelligence Community, led by the Central Intelligence Agency (CIA), focused on support to the portion of the Department of Defense that could hit them, the newly formed US Air Force. This focus on a single adversary and single service truncated the country's overall intelligence strategy and limited intelligence's

---

[1] R.A. Ratcliff, *Delusions of Intelligence: Enigma, Ultra, and the End of Secure Ciphers*, (New York, NY: Cambridge University Press, 2006), 215.

[2] Richard Overy, *The Air War 1939-1945*, (Washington DC: Potomac Books, 2005), 199.

capability to support "hot" wars when they did occur in places like Korea and Vietnam.

How the Truncation Occurred

At the conclusion of a conflict, especially one as long and draining as World War II, a nation typically would like to take a collective breath before moving on to the next challenge. Unfortunately, in the intelligence world, this is not really an option. To prepare for that next challenge or the next move by an adversary, policy makers need to know who that adversary is and what move he is making. This knowledge comes from an intelligence strategy that covers all possible adversaries. General George C. McDonald, the A-2 for the newly formed USAF, discussed this fact in a speech to the Air War College in 1947. "The first requirement for the support of the strategic theory, therefore, is for a world-wide air intelligence system. This system must be capable of maintaining continuous intelligence covering the entire political, social, industrial, scientific, and military life of actual or potential enemies. Without such intelligence, the sound planning and efficient execution of air warfare is impossible."[3]

General McDonald's theory is valid for intelligence as long as we are dealing with a time period when money is available to build and maintain a broad range of intelligence capabilities. Unfortunately, this was not the case after World War II. Drastic cutbacks in capabilities affected all areas of the military, including the intelligence community. According to General O.P. Weyland, Commander of Far East Air Forces during the Korean War, "Well, it got started, and rightly so, after World War II. Of course, everybody pretty well collapsed from whatever big

[3] Major General George C. McDonald, "US Air Force Intelligence Prior to and During World War II and Today," (Lecture, Air War College, Maxwell AFB, AL, 12 Nov 1947).

force we had. It was just demobilized precipitously…Well, the Air Force, in terms of money and people, became quite small indeed."[4]

One of the consequences of the end of the war and the subsequent cutbacks was the number of intelligence experts dropped rapidly from the rolls. Civilians who had volunteered their time and expertise as part of the Committee of Operations Analysts went back to their pre-war jobs and military personnel went back to their civilian lives. According to a Strategic Air Command (SAC) Paper called "SAC Intelligence Collection during the Korean War," this lack of expertise affected initial Air Force capabilities during the initial months of the war. "Help from the United States would not come quickly either. The shortage of reconnaissance was Air Force-wide. An economy drive in the spring of 1949 had caused the deactivation of tactical reconnaissance units in the CONUS except two squadrons…Finally, most USAF photo interpreters had left the service at the end of World War II, and no reserve photo interpretation unit had been created to provide trained photo interpreters for a war emergency."[5]

Despite all of the cutbacks, the intelligence community still had to collect information on potential adversaries. Unfortunately, remaining intelligence specialists focused virtually all of their efforts on just one country, an adversary that we never fought directly during the Cold War but nonetheless the one that posed the greatest threat to the United States. The emergence of the Soviet Union as the only other Superpower, and as a nuclear power after 1949 provided the intelligence community with a target they latched onto with vigor.

A majority of the effort from all areas of intelligence focused on gathering information on the Soviet Union. "As of June 1949, 71 percent

---

[4] General O.P. Weyland, US Air Force Oral History Interview Transcript, 11 Feb 1988, 98.

[5] Capt Sander A. Laubenthal and Dr John W Leland, "SAC Intelligence Collection During the Korean War," 25 Jun 1950 – 27 July 1953, 2.

of all American COMINT intercept personnel and 60 percent of all American COMINT processing personnel were working on the 'Soviet Problem', and yet the US was only able to intercept and process a very small portion of the Soviet radio traffic then coursing through the airwaves."[6]

The Soviet Union proved to be a difficult target for intelligence collection. According to Walton Moody in his book, *Building a Strategic Air Force*, "Air intelligence officers had been collecting data about Soviet industry and geography since 1945…Still, the services knew almost nothing about possible targets in the Soviet Union."[7] The Air Force itself admitted that target information on the Soviets was hard to come by in *Pincher*, its first set of plans for a response to Soviet aggression. "The scarcity of reliable and detailed intelligence on the USSR precludes the determination at this time of specific target systems for air attack…The current lack of intelligence of the USSR is due not only to the rigid security maintained by that country, but also to the fact that such information as is available has not yet been properly assembled."[8]

The lack of intelligence on Soviet targets and the threat posed by their growing nuclear arsenal focused the entire nation's efforts, not to mention the intelligence community's, on the capabilities and intentions of Stalin and his armed forces. There were many debates throughout the government during the Cold War over what service had the best potential for deterrence against the Soviet Union. Episodes such as the "Revolt of the Admirals" over the creation of the B-36 versus the Navy's *United*

---

[6] Matthew M. Aid, "The National Security Agency and the Cold War," in *Secrets of Signals Intelligence during the Cold War and Beyond*, ed. Matthew M. Aid and Cees Wiebes, (London: Frank Cass, 2001), 29.

[7] Walton S. Moody, *Building a Strategic Air Force*, (Washington DC: AF History and Museums Program, 1995), 140-141.

[8] Pincher plans as quoted in, *A Need to Know*, by John T. Farquhar, (Maxwell AFB, AL: Air University Press, 2004), 35.

States class super-carrier were just microcosms of what was happening throughout Washington DC.[9]

Within the Air Force itself, the Strategic Air Command (SAC) took the lead when it came to dealing with the Soviet Union. Soon, all efforts within the Air Force centered on ensuring SAC had the capabilities and intelligence to deter and strike the Soviets and their Warsaw Pact allies. This eventually took its toll on the rest of the Air Force's capabilities. According to General Weyland, "Well…old Curt LeMay…got this outfit [SAC] shortly, and discovered to his pleasant surprise, perhaps or perhaps not, that he had most of the chips. So he wasn't satisfied with having most of them; he wanted all of them…I was fighting just to preserve a force structure in the tactical air forces…There was nobody for replacement or for a small war or anything. Of course, nobody believed in small wars then, except I was beginning to worry about it."[10] General Weyland's concerns would prove true with the beginning of the Korean War, but SAC was too powerful to outmaneuver even when this war, and Vietnam after it, proved the need for a broad range of operations and intelligence capabilities.

With its striking power, and the nation's reliance on it to deter the Soviet Union, SAC drove the requirements of the air intelligence system throughout the Cold War. Nearly all intelligence collected focused on what targets to hit within the Soviet Union and how to get the strike force to those targets. According to SAC headquarters, there were six essential tasks that Air Force Intelligence had to accomplish:

1. Radar Scope Photography
2. Bomb Damage Assessment Photography
3. Target Verification Photography
4. "Pioneer" or Target Development Photography

---

[9] Jeffrey G. Barlow, *Revolt of the Admirals*, (Washington DC: Government Reprints Press, 2001).

[10] General O.P. Weyland, US Air Force Oral History Interview Transcript, 11 Feb 1988, 100.

5. Procurement of Weather Intelligence under combat conditions, and
6. Procurement, by Ferret methods, of intelligence concerning enemy electronic emissions[11]

The first four of the essential tasks dealt with finding targets and ensuring their destruction while the last two focused on getting the crews to the targets. Ferret missions were ELINT collection missions where a specially equipped aircraft would fly along the Soviet border or directly at it in an attempt to collect information on radar location and capabilities. As these aircraft flew their missions, surface-based radars would target them, providing opportunities to gather such information as radar frequency and wavelength while also providing direction-finding cuts that would allow intelligence specialists to plot the radar's location and thus allow any future strike missions to avoid it. Unfortunately, this emphasis on targets and radars within the Soviet Union did not help when the focus of the world turned to the first combat of the Cold War on the Korean Peninsula.

Struggling to Catch Up…Again

With the focus of nearly the entire intelligence community on finding targets within the Soviet Union, the invasion of South Korea by Communist forces from the North came as quite a surprise throughout the various intelligence agencies. American forces in Japan were unprepared to deal with the invasion, much less the speed of advance of the North Korean troops. For its part, the Air Force struggled to find ways to support the beleaguered South Korean forces and the US Army and Marine units deployed alongside them.

Far East Air Forces (FEAF) took the lead for the Air Force in the Korean Conflict. Like all other major military organizations, FEAF was thoroughly unprepared for the conflict from the perspective of intelligence and its support to the fight. "During the turmoil of the war's early months, UN forces suffered from shortages of reconnaissance

[11] Farquhar, *A Need to Know*, 101.

aircraft, intelligence personnel, and maps."[12] These shortages prevented friendly forces from dealing efficiently with the enemy's movements, mostly because the North Koreans, and later the Chinese, were virtually untraceable other than when they attacked friendly forces. With very little IMINT and SIGINT capability to track enemy maneuvers, friendly ground forces were reactive. At the same time, air assets could not support the fight through air interdiction or strategic attack because there was no detailed target information available on which targets to strike or how to strike them. "Shortages of qualified intelligence personnel, especially photo-interpreters, made continuous surveillance of enemy troop movements, concentrations, and airfields impossible."[13]

The lack of maps also confounded efforts to remedy the lack of targets available to friendly bombers. "This was the first of many occasions when old maps of Korea would prove inaccurate. As part of a USAF Target Dossier project, FEAF had been responsible for marking objectives within a thousand mile circle around Tokyo, but Siberia had gotten first priority and Korea was not in the coverage as of June 1950."[14] The truncation of intelligence capabilities as a result of their focus on the Soviet Union hindered the intelligence community's readiness to deal with the fight at hand.

The notes from a FEAF study done by Colonel Alvin Hebert sum up the lack of IMINT capabilities as part of an overall evaluation of the effectiveness of the USAF in the Korean Campaign: "There is no central pool of knowledge in the Theater, in or out of FEAF, which knows all the air reconnaissance and photo situation. There is, therefore, no place, where a unit can apply to find what photos or photo intelligence…is already available. This results in many requests for duplication, and many actual duplications, of photo cover and photo intelligence. Net

---

[12] Farquhar, *A Need to Know*, 134-135.
[13] Farquhar, *A Need to Know*, 135.
[14] Futrell, "USAF Intelligence in the Korean War," 281.

result – the slim reconnaissance resources have been dissipated re-gathering material which was already on hand in one or another place within the theater."[15]

Even SAC, which, as stated previously, received a bulk of the budget for the USAF, was not immune to the intelligence problems faced by FEAF. According to a study done by the Fifteenth Air Force, which provided SAC's bomber contribution to the Korean War and formed the FEAF Bomber Command (BomCom), "Critical target analysis section problems included the following: (1) A shortage of up-to-date target intelligence information. (2) Critical shortage of FEAF target materials, including maps and charts. (3) Inadequacy of target dossier materials furnished by HQ, FEAF… (8) Lack of availability of drafting and photo interpretation equipment. (9) Critical shortage of trained target personnel. This shortage resulted in an almost overwhelming workload throughout the entire FEAF Bomber Command operation and necessitated utilizing OJT [on the job training] personnel."[16]

Fortunately, once engaged, the United States caught up quickly. Intelligence personnel began to flow into the theater and reconnaissance assets started accomplishing the actions required to develop a useful target list. Within the confines of the Korean War, a broad intelligence strategy eventually developed. From SIGINT and IMINT, to reporting and escape and evasion, the air intelligence community started to get things right. "Photo reconnaissance allowed FEAF to keep check on the status of airfield repairs and to schedule them for attack just when they were almost ready for use by Communist aircraft."[17]

---

[15] Colonel Alvin Hebert, "Evaluation of the Effectiveness of the United States Air Force in the Korean Campaign," (Air Force Historical Research Agency Archives call no. K168.041-1 v.20), 2-2.

[16] Fifteenth Air Force Historical Study, Air Force Historical Research Agency Call Number MICFILM 51051.

[17] Futrell, "USAF Intelligence in the Korean War," 286.

At both the strategic and tactical level, SIGINT units began to get indications of Soviet activity that might affect the overall fight. Tactical intercept of voice communications provided indications that Soviet pilots were flying combat missions in the MiG-15, while at the strategic level radio transmissions provided indications that the Soviets were up to something big.[18] Unfortunately, the fixation on the Soviets and their potential activities in Europe once again clouded the situation. According to Futrell, "What was intercepted was not disclosed but General Omar Bradley later revealed that intelligence had indicated that the Soviet Union intended to make a major move, probably in Korea, but possibly in Europe."[19] The system tried once again to truncate itself: Even during an ongoing, high-intensity war, the focus of the United States started to shift back to the Soviet Union and away from Korea.

This incorrect focus between the war in Korea and the potential conflict in Europe occurred in the quality of aircraft apportioned to the FEAF for use over Korea. A majority of the reconnaissance aircraft used in the Korean theater were the RB-29s, which were vulnerable to enemy interceptors due to their slow speeds and low altitudes, and therefore required friendly fighter escorts. In situations where reconnaissance squadrons were expecting upgraded equipment, the Air Force got creative to ensure that the new aircraft stayed within the United States. "On 16 November 1950 the 31st Strategic Reconnaissance Squadron (SRS) was redesignated the 91st SRS, which continued to operate RB-29s from Okinawa. Since July 1950 the 91st SRS, based at Barksdale AFB in Louisiana, had been re-equipping with the Boeing RB-50, a much

[18] Futrell, "USAF Intelligence in the Korean War," 285.
[19] Futrell, "USAF Intelligence in the Korean War," 286.

improved variant of the RB-29, but in this paper transaction the more modern aircraft remained in the USA."[20]

While intelligence organizations in Korea struggled to gather information through outdated and less-effective aircraft, SAC continued to benefit from its high position within the Air Force. "By the end of 1953 SAC had four heavy strategic reconnaissance wings, the 5th, 28th, 72nd, and 99th, all equipped with the RB-36."[21] Despite these four fully formed reconnaissance wings and the limited number of planes available to FEAF, assets from the Korean theater still had to supplement overall collection on the Soviet Union. Reconnaissance aircraft from the 91st SRS received taskings beyond their jobs supporting the fight in Korea. "In addition to electronic countermeasures (ECM) operations over Korea, and occasional penetrations of Chinese airspace, the 91st SRS also undertook numerous long-range "ferret" missions off the north-east coastline of the Soviet Union."[22]

A further focus on the Soviet Union occurred within the technical intelligence realm through multiple efforts to gain knowledge on the capabilities of the new Soviet fighter, the MiG-15. Chief Warrant Officer Donald Nichols was the primary collector of technical intelligence for United Nations forces. Eventually a Major, Nichols led an organization of American and Korean personnel whose job was to collect technical information on Korean, and therefore Soviet, capabilities. Their efforts to collect positive intelligence "by any means necessary" included a foray fifty miles behind enemy lines via helicopter to examine the wreckage of a downed enemy MiG.[23]

---

[20] Robert Jackson, *High Cold War: Strategic Air Reconnaissance and the Electronic Intelligence War*, (Somerset: Patrick Stevens Limited, 1998), 41.

[21] Jackson, *High Cold War*, 56.

[22] Jackson, *High Cold War*, 44.

[23] Conrad C. Crane, *American Airpower Strategy in Korea, 1950-1953*, (Lawrence, KS: University Press of Kansas, 2000), 52.

Another attempt to gather information on enemy capabilities occurred as part of Project MOOLAH. As part of this project, United Nations forces made an offer of money in exchange for the delivery of a flyable MiG-15. While ostensibly an attempt to gain control of an aircraft that friendly aircraft faced over North Korea, this was also an attempt to gather information, once again, on Soviet capabilities. Repeated attempts to gather technical intelligence through defections or captured enemy equipment would continue throughout the Cold War.

One final area of success towards achieving a broad intelligence strategy was the fact that intelligence eventually was considered co-equal with operations. For much of the Cold War, before and after the Korean War, intelligence was just a staff function. As a result of the Korean War, however, some began to see intelligence as a requirement for successful operations against the enemy. According to Major General Donald Putt, USAF Director of Research and Development, "Not too many months ago, Intelligence was just another staff function. Except to those whose assignment it was to practice it, it was ordinarily considered to be a minor one. What happened in Korea on the 25th of last June changed all this."[24]

According to Major General George Keegan, former Assistant Chief of Staff, Intelligence, "You cannot have intelligence working for operations…and ever expect the truth to get to the top. Those operations that have succeeded since World War II – air, ground, and naval – have been those operations in which intelligence sat side by side with operations and was made to bear equal responsibility for the consequences of the planning…because the one man who knows the

[24] Major General Donald Putt, as quoted in "USAF Intelligence in the Korean War," by Robert F. Futrell, 288.

enemy is not the director of operations but is the director of intelligence."[25]

Unfortunately, once hostilities ended in Korea, the focus once again returned almost entirely to the Soviet Union. The military in particular saw the Korean War as an aberration, with the true threat remaining nuclear confrontation. Few understood that the future likely held more Koreas and fewer nuclear exchanges. General Weyland was one of the few who saw clearly what lay ahead: "The Korean War kind of proved that maybe some tactical air forces were sort of necessary. I was convinced that we would have more Koreas, but not someplace where we had air power and ground forces readily available; it would be someplace else."[26]

For the next decade, the intelligence community returned to the pursuit of information on the Soviet Union, what targets to hit, how to get to them, and how to know if they were about to start World War III. According to Conrad Crane, "…the Air Force, and TAC [Tactical Air Command] with it, soon returned to its focus on general nuclear war. There was no real incentive to do otherwise. Perceived success in Korea reinforced the Air Force position that preparing for global war meant being ready for conflicts of lesser magnitude. Nuclear strategies and strategists dominated US military thinking and force structure, and strategic bombing of the enemy homeland remained the raison d'être of the US Air Force."[27]

Of course, the Soviet Union was still not an easy target even if it was a relatively predictable and stable one. According to Steven L. Rearden, "While counterforce targeting steadily gained favor as the 1950s

---

[25] Major General George J. Keegan, Jr., "USAF Oral History Interview," (Maxwell AFB, AL: Air Force Historical Research Agency, 1987), call number K239.0512-1740, 197.

[26] General O.P. Weyland, US Air Force Oral History Interview Transcript, 11 Feb 1988, 101.

[27] Crane, *American Airpower Strategy in Korea*, 175.

wore on, not until the end of the decade did SAC acquire the technology and intelligence to make an effective counterforce strike appear feasible. Until then, US targeting doctrine had tended to remain fluid; it emphasized the selection of aim points that would cause the maximum amount of damage to the Soviet military-industrial complex in the shortest amount of time."[28] This approach to targets was valid as long as the next fight would actually take place against the planned enemy. Fate, however, in the form of the Viet Cong and North Vietnamese, intervened, and once again, the US and its intelligence capabilities were looking in the wrong direction.

Truncated by War Itself

The prevailing American assumption in the 1950s and 1960s that preparation for general nuclear war would be sufficient for dealing with small, brush fire wars pervaded all aspects of military planning throughout the Cold War. Major General Charles Dougher, Commander of the Air Technical Intelligence Center, stated, "The pattern we have seen might lead us to expect that in the years to come we will have a series of small wars. But, the minute you start cutting into your deterrent force and start overemphasizing 'brush fire' aspects you are in trouble. We should have the capability for 'brush fire war' but not at the expense of deterrent capability."[29]

Unfortunately, the opposite proved to be true. An effective preparation for general nuclear war does not prepare a country for fighting smaller wars. This is especially true of air intelligence and the capabilities required for the various levels of war. Knowing where to drop a nuclear weapon on the Soviet Union will not help find three members

---

[28] Steven L. Rearden, "US Strategic Bombardment Doctrine since 1945," in *Case Studies in Strategic Bombardment*, ed. R Cargill Hall, (Washington DC: USAF History and Museums Program, 1998), 408.

[29] Major General Charles B. Dougher, "USAF Oral History Interview," (Maxwell AFB, AL: Air Force Historical Research Agency, 1961), 5.

of the Viet Cong as they walk along the Ho Chi Minh Trail with supplies on their backs. As more Americans deployed to South Vietnam during the 1960s, this fact became painfully obvious.

In the early stages of the Vietnam War, intelligence agencies dealt with problems similar to those they faced once the Korean War began in 1950. Lack of information on potential targets, poor mapping capabilities, and a general lack of quality intelligence personnel are just a few of the problems highlighted in the first years of American involvement in the conflict. The largest problem, however, was the fact that few in the military recognized the type of war they were fighting. According to a Rand report written in 1972, "Critical information gaps continued to cloud our perceptions as to what was really happening in Vietnam. To take one case, there was a notable lack of adequate intelligence on the full extent of VC [Viet Cong] activities in the countryside from 1958 through 1965. While the VC concentrated on guerilla warfare in the rural areas, our focus was on the GVN [Government of Vietnam] in Saigon and on the conventional military balance."[30]

The Rand study highlights various issues that prevented the intelligence agencies within the United States and South Vietnam from effectively supporting the forces engaged with the Viet Cong. The biggest problem identified was the fact that the intelligence agencies had neglected the capabilities designed to collect information needed for a counterinsurgency. As Robert Komer noted, "The kinds of intelligence most needed in Vietnam were simply alien to the standard institutional repertoires of most US and GVN intelligence services involved. The US and GVN military intelligence empires…were focused in classic style mostly on order of battle. Identifying and locating enemy main force

---

[30] R.W. Komer, *Bureaucracy Does Its Thing: Institutional Constraints on US-GVN Performance in Vietnam*, (Santa Monica, CA: Rand, 1972), 59.

units and movements (or targets) was the order of the day, to the neglect of such other key elements of a highly unconventional enemy establishment as local guerrillas or the Viet Cong infrastructure."[31] American focus on information that would be useful in a conflict with the Soviet Union in Europe, such as the number of tanks destroyed and where the aircraft were located, was insufficient for dealing with troops that did not have tanks and had no hope of flying fighter aircraft. In short, the theory that preparing for general war would make the country ready for limited wars proved false.

Once again, to make up for a lack of capabilities, intelligence agencies had to play catch-up. In 1963, the Second Air Division, with the responsibility to advise and train the GVN as part of Military Assistance Command Vietnam (MACV) worked to develop a photoreconnaissance capability that would be effective in a counterinsurgency. "Before this was done military operations against the insurgents were hamstrung by a lack of intelligence information and once the elusive communist guerrillas had slipped back to their secret bases after an attack they were safe. Now with airborne camera probing into every corner of the country there is no place for the Viet Cong to hide."[32] This capability rapidly became indispensable to missions against the Viet Cong. "The importance of this new weapon [photoreconnaissance] is emphasized by the fact that over ninety percent of all current military operations carried out by the armed forces of the Republic of Vietnam are based on intelligence supplied by photoreconnaissance."[33]

---

[31] Komer, *Bureaucracy Does Its Thing*, 59.
[32] CORONA HARVEST Report, 1963, located at AFHRA, Call Number K526.626-1, 65.
[33] CORONA HARVEST Report, 1963, located at AFHRA, Call Number K526.626-1, 65.

Air intelligence built this photoreconnaissance capability at two different levels, strategic and tactical. At the strategic level, national agencies developed photos taken by the U-2 and SR-71 and sent the intelligence to forces within Vietnam. This lengthy process, however, made this intelligence less valuable to the fight on the ground because in a counterinsurgency, intelligence has to be fast and responsive. "Although SR-71s and other reconnaissance platforms provided considerable information, their information usually was not timely or pertinent to the targets planned for a particular day. Most of the information produced by these platforms was used by national intelligence agencies for detailed evaluation of the effects of air attacks on the military, political, and economic life of the country."[34]

Tactically, the photo intelligence was more responsive (although still an involved and lengthy process), and therefore more useful to ground operations. Two distinct portions formed this tactical capability. First was the platforms used to collect the intelligence. In this aspect, propeller-driven aircraft distinctly outperformed jet aircraft. Fast moving aircraft converted to reconnaissance assets, such as the RF-101, were not the solution to finding an enemy that moved in groups of two or three through jungles. "Although the RF-101 was good for general reconnaissance of clearly fixed targets, it was not suited to spotting an enemy who hid under heavy foliage by day and moved at night."[35] Instead, the Air Force and Army purchased such aircraft as the OV-1 Mohawk and the OV-10 Bronco. These aircraft traveled much more slowly and had longer loiter times, which made them perfect reconnaissance assets for a counterinsurgency.

---

[34] General William W. Momyer, *Air Power in Three Wars (WWII, Korea, Vietnam)*, (Maxwell AFB, AL: Air University Press, 1978), 232.

[35] Robert F. Futrell, *The Advisory Years to 1965*, (Washington DC: Office of Air Force History, 1981), 135.

The second portion of the tactical level of photoreconnaissance was the actual collector on the platform. This was either the pilot, using his eyes, or the pilot or a passenger carrying a hand-held camera. According to a 13 Reconnaissance Technical Squadron history, "The Hand-Held Camera Program provided the capability to accomplish low altitude pinpoint photography of VC installations, defense positions, and activities."[36] As far as the pilots were concerned, they performed visual reconnaissance every time they flew, especially the forward air controllers (FAC). "During the period 1963-1964, Forward Air Controllers were a prime source of intelligence about the enemy. By flying over the province day after day, the pilot got to know the province in detail and easily noticed changes in the activities of villages, which would often indicate the presence of enemy elements. Based on this information, patrols were dispatched to confirm the intelligence."[37]

Overall, this system was still slow, but much faster than relying on national-level intelligence from satellites or SR-71s. The slowness actually stemmed from the process for nominating targets. Once a reconnaissance asset photographed a potential target, a photo interpreter developed and then analyzed the image of the target along with other intelligence available about the area. The information then passed through official channels to the appropriate unit's intelligence officer, who was responsible for confirming the identity of the target via the Vietnamese provincial chief. This risky process entailed providing the information to the provincial chief of the suspected area who then confirmed whether or not the target was valid and requested a strike. The risk involved the loyalty of the provincial chief. If loyal to the Government of Vietnam, they were valuable assets that could add HUMINT information into the calculation. If they were Vietcong

---

[36] History, Deputy for Intelligence, 2nd Air Division, 1 July-31 December 1965, 4.

[37] Momyer, *Air Power in Three Wars*, 267-268.

sympathizers, they might warn insurgents in the area of the target, making the strike less effective. Once approved, the request for the strike traveled, again through official channels, to the corps level for selection of the weapon type and timing of the strike. According to a Second Air Division briefing given to Secretary of Defense Robert McNamara on 6 May 1963, "The selection and confirmation of interdiction targets is a detailed and time consuming task. This system is in no way haphazard, and in no way could the term 'indiscriminate' be applied to it."[38]

One of the largest obstacles that air intelligence had to overcome in creating intelligence capabilities that could support a counterinsurgency is a problem that still plagues intelligence today. The quality of the intelligence officer is a key factor in determining the effectiveness of the intelligence support to the fight at hand. After the Korean War, as seems to occur after every war, Congress cut the services' budgets. Intelligence is not safe from these budget cuts and had to deal with a shrinking force size, just like everyone else. These cuts affected the overall capability of intelligence officers during the Vietnam War. General William Momyer, Commander of Seventh Air Force and the Deputy Commander for Air Operations, MACV, stated, "Throughout the war intelligence suffered from a lack of officers in the field grade rank. These people are the real foundation of intelligence since they are concerned with targeting, analysis, and force recommendation. Because of the shortage of people at this level, most of the positions were filled by lieutenants…These lieutenants did a great job, but they didn't have the hard experience required. By the time these young officers were beginning to get some practical experience, their tour was up and they were rotated."[39]

---

[38] 2nd Air Division, "Briefing to the Secretary of Defense," 6 May 1963.
[39] General William Momyer, USAF (ret) to General Richard Ellis, Vice Chief of Staff, USAF, 1975.

Air intelligence had to overcome many shortcomings during the Vietnam War due to the truncation of intelligence capabilities. This truncation stemmed primarily from the type of war in which the United States found itself. The common thought process within the military was that the preparation for a general war with the Soviet Union would provide ample training and capabilities to cover any "brush wars" that might occur. However, the situation within Vietnam proved to be beyond the general capabilities practiced. "The development of in-country intelligence posed very difficult problems, i.e., the lack of a formalized battlefield with a typical distribution of weapons and forces, the lack of intelligence coming from the people on the location and disposition of enemy troops in their villages, [and] the inability of sensors to pick out significant features of the enemy's logistical and combat structure."[40] These unique characteristics prevented an air intelligence system focused on finding targets and threats within the Soviet Union from dealing with the enemy at hand. As such, the Viet Cong were able to operate and move throughout South Vietnam with relatively minor interference from friendly forces. In the end, a series of intelligence failures, from the grand strategic to the tactical level, contributed to the overall defeat of friendly forces during the Vietnam War.

The Cold War Ends

After the Vietnam War, the focus of intelligence once again returned to what its practitioners knew best, the Soviet Union. Leadership within the military and even within the government adopted the attitude that the United States would never again get involved in a counterinsurgency. The country could not afford the toll in blood and treasure to fight another Vietnam. With the drawdown of forces came the departure of intelligence expertise within the services. During the

---

[40] General William Momyer, USAF (ret) to General Richard Ellis, Vice Chief of Staff, USAF, 1975.

late 1970s and 1980s, intelligence once again became subordinate to the operators. Intelligence capabilities returned to dealing with the Single Integrated Operations Plan (SIOP), the plan for nuclear war should it occur.

Much of the intelligence community's effort focused on the technical aspects of collection. Satellites, and other means of collection, were becoming more appealing as collectors because a human was not flying over enemy territory or trying to sneak into enemy facilities. Some intelligence personnel believed that any intelligence needed was available via SIGINT and IMINT and that HUMINT and OSINT were less important.

Admiral Stansfield Turner, Director of Central Intelligence from 1977 to 1981, adopted these beliefs, reflected in a statement he made in *Foreign Affairs*: "Electronic intercepts may be even more useful in discerning intentions. For instance, if a foreign official writes about plans in a message and the United States intercepts it, or if he discusses it and we record it with a listening device, those verbatim intercepts are likely to be more reliable than second-hand reports from an agent. Not only do agents have biases and human fallibilities, there is always the risk that an agent is, after all, working for someone else."[41]

This shift to technical collection, however, was just another way that air intelligence truncated itself during the Cold War. According to former Assistant Chief of Staff for Intelligence, Major General Chesley G. Peterson, this truncation was highly problematic. "To rely solely on certain types of intelligence," he said, "technical intelligence and things like that, is taking a risk that I believe is highly dangerous."[42]

By truncating the capabilities available to it, the Intelligence Community limited its ability to be prepared for contingencies

---

[41] Stansfield Turner, "Intelligence for a New World Order," *Foreign Affairs*, Fall 1991, 158.

[42] Maj General Chesley G. Peterson, "US Air Force Oral History Program," 19-30 Aug 1985, 29.

throughout the world and to inform policy makers' decisions on national security matters during the Cold War. This truncation developed because of a singular focus on the most threatening enemy at the time. Air intelligence directed all of its efforts towards the determination of what targets to hit within the Soviet Union and how to get to them, along with searching for indications of impending attack.

As a result of this narrow focus, the US Air Force, like the country as a whole, was unprepared for the two major conflicts that occurred during the Cold War. Intelligence collection capabilities were not adequate to gather information on the enemy, and the intelligence system itself was not prepared to handle the volume of intelligence required to fight a major ground war in Korea or a counterinsurgency in Vietnam. Similarly, the number and quality of intelligence professionals was not nearly high enough to deal with the many different demands of these two wars.

With the end of the Cold War, and the demise of the Soviet Union, it would seem logical that air intelligence would overcome this truncation. This, however, was not the case. The "peace dividend" and "New World Order" trumpeted widely at the end of the Cold War encouraged a partial dismantling of intelligence capabilities, which would have long-lasting effects on post-Cold War military capabilities. According to General Peterson, "In fact…we have adopted the horrible habit of emasculating our intelligence efforts. Intelligence is one of these things that has to be built up over the years, and if any goes wrong you're not only putting yourself in danger it just takes years and years to rebuild it. But the worst part of it is that unless you allow your intelligence people to be professional intelligence people without interference, you're just not going to get good intelligence."[43]

---

[43] Maj General Chesley G. Peterson, "US Air Force Oral History Program," 19-30 Aug 1985, 29.

Chapter 4

After the Cold War

The threat we face is not that of a potential nuclear Armageddon, as during the Cold War. It is nevertheless a huge threat and from sources more varied and more unpredictable than our erstwhile enemies of the Cold War. It follows from this fact that the United States needs to restore on a permanent and continuing basis a culture of risk that hitherto it has had only in times of war.

Charles Cogan

The end of the Cold War had obvious effects on the world's geopolitical environment. Nations no longer felt threatened by the spectre of a nuclear holocaust. A feeling of relief and hope that lasting peace would finally be possible replaced the potential for a clash between two Superpowers, a feeling that reached the highest levels of government. As former President George H.W. Bush stated in a speech to Congress on 11 September 1990, "Out of these troubled times, our fifth objective – a new world order – can emerge: a new era, freer from the threat of terror, stronger in the pursuit of justice, and more secure in the quest for peace. An era in which the nations of the world, east and west, north and south, can prosper and live in harmony."[1]

This vision of peace and harmony, while not an accurate prediction of what was to come, provided impetus to the United States, and specifically the Intelligence Community (IC), to change its focus from its well known enemy, the Soviet Union, to an as-yet unknown enemy. This refocusing of intelligence should have removed the largest cause of truncation plaguing the IC since the end of World War II. No longer would the efforts of intelligence agencies have to focus on a single enemy

[1] George H.W. Bush, "Address to Joint Session of Congress, 11 Sep 1990," as quoted in *Encyclopedia of Leadership*, ed. George R Goethals, et al. (Thousand Oaks, CA: Sage Publishers, 2004), 1776.

with the capability to destroy the United States. The IC should have been able to accomplish the ultimate goal of all intelligence organizations: informing decision makers of all potential threats and providing information on all known threats. Instead, however, a lack of strategic direction from US government policy makers and a further hollowing-out of the Air Force intelligence career field truncated our intelligence capabilities.

The New World Order

With the "New World Order," as envisioned by President Bush and his administration, and the peace dividend that Congress dreamt of at the end of the Cold War, the Defense Department started the inevitable downsizing that occurs after a major conflict. In the downsizers' minds, there was no longer an existential threat to the United States, so there was no longer a need for large defense expenditures. While arguably valid for such items as equipment and training budgets, this approach is not valid for intelligence collection capabilities. Even when a country faces no obvious threats, intelligence agencies must remain on the lookout for potential enemies. In a recent speech, Admiral (ret) Dennis Blair, the current Director of National Intelligence, highlighted this fact. "So although the end of the [Cold War] lifted a huge threat from the United States…it actually made the job of intelligence agencies much more complex, and in many ways, more difficult. We had been set up to focus relentlessly on a single adversary over a long period of time. All of a sudden, we had to keep watch on the entire world in a much more detailed and dynamic way, uncovering threats to our national interests, being alert for opportunities to advance those interests."[2]

The United States Government, however, did not effectively direct the IC's efforts. Instead, "the complexity of today's [early post-Cold War

---

[2] Admiral (ret) Dennis Blair, "Remarks by the Director of National Intelligence," *Alfred M. Landon Lecture Series on Public Issues*, Kansas State University, 22 Feb 2010.

timeframe] threats, coupled to the conceptual uncertainty accompanying the redefinition and appropriate framing of U.S. foreign policy responses, has led many policy officials to respond to intelligence agency surveys asking about their needs by saying that they require as much information from as many different sources as possible about all the things that could go wrong or precipitate crises that might involve the United States."[3]

White House guidance was no more helpful in directing the IC where to look. According to the National Security Strategy in 1994, "In order to adequately forecast dangers to democracy and to U.S. economic well-being, the intelligence community must track political, economic, social and military developments in those parts of the world where U.S. interests are most heavily engaged and where overt collection of information from open sources is inadequate."[4]

The lack of direction caused the IC to flounder, trying to find information on anything and everything all at once with far fewer resources. This search included areas previously unexplored by intelligence agencies. According to Robert Gates, then Director of the Central Intelligence Agency, the IC directed intelligence efforts against "so called new agenda environmental issues" such as ozone depletion, tropical deforestation, climate change, ocean dumping of hazardous materials, water scarcity and deprivation, environmental impacts of narcotics cultivation, food shortages, and the impact of earthquakes and other natural disasters.[5]

---

[3] Allen E. Goodman, "Intelligence in the Post-Cold War Era," in *In From the Cold: The Report of the Twentieth Century Fund Task Force on the Future of U.S. Intelligence*, (New York, NY: The Twentieth Century Fund Press, 1996), 37.

[4] William Clinton, *A National Security Strategy of Engagement and Enlargement*, (Washington D.C.: The White House, Office of the Press Secretary, July 1994), 14.

[5] Allen E. Goodman, "Intelligence in the Post-Cold War Era," 55-56.

A non-specific grand strategy in the 1990s also drew the United States into multiple peacekeeping and humanitarian missions that depleted the capabilities of the already thinly stretched IC. With shrinking budgets and a greater demand for information on a wide variety of topics, the intelligence system began experiencing a truncation in its capabilities. US forces were involved in deployments throughout the world and required intelligence to support their efforts. To remedy this situation, President Clinton issued a Presidential Decision Directive (PDD-55) ordering the IC to provide more tactical support to these military deployments. This effort only served to truncate intelligence capabilities even further. According to one author, "Since the military spent most of the 1990s deployed in one peacekeeping operation after another (often with more than one taking place at the same time), the result of the commitment…was a diversion of shrinking national, strategic intelligence resources to growing, tactical missions."[6]

This shrinking of available resources worried leadership within the IC and specifically within Air Force Intelligence. Lieutenant General James Clapper, the former Assistant Chief of Staff – Intelligence (ACS/I) and Director of the Defense Intelligence Agency described his concerns in Congressional hearings titled, *IC21: The Intelligence Community in the 21st Century*. During his opening statement he said, "I was the Chief of Air Force Intelligence during Desert Storm, I know how thinly stretched we were then to support *one* major regional conflict. The notion of having two conflicts, however near simultaneous they are, given the considerable resource reductions, (notably people)…I think makes the

---

[6] Michael Warner, "Central Intelligence: Origin and Evolution," in *Intelligence and the National Security Strategist*, eds. Roger Z. George and Robert D. Kline, (Oxford: Rowman & Littlefield Publishers, Inc., 2006), 50.

notion of surging to support two such conflicts very, very problematic.[italics in original]"[7]

Once again, equipment or training budgets were not the only focus of these cutbacks. The major effect that smaller budgets had on the military intelligence community was in trained personnel with capabilities gained – and only gained -- through years of experience. According to General Clapper, "Then to absorb a 17.5 percent reduction mandated by the Congress, in addition to the reductions that have been mandated administratively – the net result of which will mean about a 30 or 33 percent reduction in intelligence manpower, by the end of the century compared to what we had in 1990, I think the math would tell you that there is just no way to get there from here."[8] Personnel cuts were hard on all services within the Defense Department. To make things worse within the Air Force, the intelligence career field did some truncation of its own.

Self-Truncation

After the Cold War, and especially after Operation Desert Storm, the Air Force re-emphasized the importance of a highly developed targeting capability. This formal recognition of the need for effective targeting began with the creation of the *Air Targets Officer* Air Force Specialty Code (AFSC) in 1954 and a formal targeting school for intelligence officers in 1974.

The intention of this course was to create intelligence officers with the ability to fuse operations and intelligence into one skill set that combined the threat expertise of intelligence with the operational

---

[7] House, *IC21: The Intelligence Community in the 21st Century Hearings: Hearings before the Permanent Select Committee on Intelligence*, 104th Cong., 1st sess., 1995, 318-319.

[8] House, *IC21*, 337.

knowledge of the operator.[9] "Once fully trained, targeteers directly support the war fighting capability of the Air Force to apply optimum force on the best target set at the right time in the most survivable manner so as to favorably influence the course of a conflict."[10]

Air Force intelligence also stated that, "The targeteer's skill must be learned through comprehensive study, training, experience, and performance. While the historical lessons of the past remain useful as rough guides, today's targeteer must anticipate the nature of future conflicts and the evolution of advanced capabilities, as well as be ready to assist in the application of aerospace forces today."[11] Clearly, Air Force Intelligence recognized the importance of targeting capabilities and that it takes time and experience to create a targeting professional. This recognition continued throughout the period after the Cold War and received emphasis after Desert Storm. In a briefing entitled "Air Force Targeting 2000" created in November 1993 by the Headquarters 497th Intelligence Group (IG) Directorate of Targets, targeting was declared "critical to successful war fighting; an ops-intel team effort."[12]

However, despite the importance of targeting and the significant experience required to be an effective targeteer, the Air Force suddenly truncated this capability by removing the target specialty from the Air Force intelligence officer career field. According to former Assistant Chief of Staff/Intelligence, Maj Gen (Ret.) John Casciano, "The theory behind this decision was that all Air Force intelligence officers would be trained in the application of intelligence to Air Force missions, and that the Air Force would train and rely on the enlisted troops for technical expertise in targeting and weaponeering. This would free up the officers to become

---

[9] Air Force Pamphlet (AFPAM) 200-17, *An Introduction to Air Force Targeting*, 23 June 1989, 6-8.
[10] AFPAM 200-17, *An Introduction to Air Force Targeting*, 8.
[11] AFPAM 200-17, *An Introduction to Air Force Targeting*, 8.
[12] HQ 497th Intelligence Group, Targeting Directorate, "Air Force Targeting 2000," 1 November 1993, 12.

more generalists. The change is consistent with the prevailing view that the Air Force needed only intelligence generalists to support Air Force operations."[13]

In the mid-1990s, Air Force Leadership, against the advice of senior intelligence officers, determined that it would be cheaper to maintain generalist intelligence officers rather than those trained in specific capabilities. That way, any number of intelligence officers could fill any intelligence job and on-the-job training would theoretically suffice to bring that officer up to speed on the requirements of the position. As a result, the targeting career field within intelligence, along with several others, ceased to exist, and the Air Force centralized a majority of its targeting capabilities at the 497th IG, which became the service's targeting center. The echoes of the Air Force's claim that preparation for general war would be sufficient training for any type of small, brush-fire wars should by now be familiar. We have seen why this approach was ineffective during the Korean and Vietnam Wars on a large scale, so it should have been no surprise that it would fail in less intensive conflicts during the 1990s.

John Glock, an Air Force targeting expert and Desert Storm targeteer, saw the Air Force's path as a negative one. In an article written for the Airpower Journal, he stated, "effective targeting remains crucial to applying aerospace power. Targeting remains one of the easiest and most cost-effective means of preserving our diminishing resources before the first weapon is committed. Yet the Air Force is in danger of forgetting that targeting is a unique, critical function. It has already eliminated the only comprehensive course in the DoD dedicated

[13] Major General John Casciano, interview by the author, 5 May 2010.

to air targeting and relinquished the lead in the development of the Joint Target Training Program."[14]

Clearly, despite the importance of targeting and its historically central role in Air Force operations, the career field dedicated to it was not a top priority for the Air Force after the Cold War. According to General Casciano: "During the Cold War, the Air Force put a majority of its efforts into the strategic mission … and intelligence followed suit with a heavy emphasis on targeting, air defense analysis and scientific and technical intelligence. Within the tactical air forces, that investment was minimal. As a result, the talent was not there during Vietnam, nor was the investment. Ultimately, young Air Force "operators" had a negative view of the intelligence business, and this was reflected when they assumed leadership roles within the Air Force."[15]

With the shrinking budgets of the post-Cold War era, and the country's growing aversion to putting its young men and women at risk, leadership often turned to airpower in times of crisis. The ability to launch precision strikes, using either aircraft or cruise missiles, allowed the President to strike at enemies while keeping ground forces out of harm's way. Ironically, even as policy makers turned increasingly to airpower, the Air Force allowed its experienced targeteers to disappear or to become general intelligence officers. Despite the clear importance of intelligence, the Air Force truncated its range of capabilities yet again.

9/11 Wake Up Call

The generalization and truncation of the intelligence career field, along with a lack of guidance and budget from leadership, kept the IC from identifying the specific threat posed in the late 1990s and early 2000s by terrorist groups focused on attacking the United States and our allies. Intelligence agencies throughout the government were aware of Al

---

[14] John R. Glock, "The Evolution of Air Force Targeting," *Airpower Journal* 8, no. 3 (Fall 1994).

[15] Casciano, interview.

Qaeda and its spiritual leader Osama bin Laden, but they were unable to prevent attacks ranging from truck bombs at the World Trade Center to water borne attacks on the USS Cole. Ultimately, an intelligence capability, originally designed to find and describe targets within the Soviet Union during the Cold War, and then truncated in the 21st Century by a lack of budget and guidance, could not prevent the first enemy strike on American territory since Pearl Harbor.

The details of the 9/11 attacks and the failure of the IC to prevent them have been thoroughly covered in everything from magazines to Congressional Hearings and therefore will not be rehashed here. Instead, we will examine the reactions of the IC, and specifically the air intelligence portion of the community. Fundamentally, the 9/11 attacks, and the subsequent wars in Afghanistan and Iraq, presented the IC an opportunity to do what it does best: focus on an enemy. The difference between the IC's focus during the Cold War and the current IC is the huge quantity, range, and complexity of the intelligence it requires to track an elusive and ruthless set of enemies.

During the Cold War, it was sufficient for the IC to focus on large tangible objects as targets for collection. Counting the number of ships docked at piers in Soviet ports was an effective method for determining the status of the Soviet Navy. Similarly, using IMINT to determine the readiness of a Soviet armored unit could provide overall indications of Soviet readiness during times of heightened tensions. The intelligence sought was often physical in nature. Intelligence analysts could deduce enemy intentions based on the physical location of his forces. This level of intelligence is no longer very helpful within the context of our current counterinsurgencies.

A fight against terrorists or counterinsurgents requires intelligence at a much greater level of detail and fidelity. Instead of comprising a large mechanized force, the enemy is more likely to be a group of fewer than ten individuals. The only way to determine their intentions is to

hear their words or study their patterns of life. This intelligence, which is provided by SIGINT, HUMINT, and full motion video (FMV), among other capabilities is key to current operations against Al Qaeda, the Taliban, and their associated extremist movements.

After 9/11, air intelligence rapidly adjusted to the new requirements driven by this new set of opponents. The Air Force built up its FMV capability through the Predator and Reaper Remotely Piloted Systems (RPS). As of January 2010, the Air Force maintained 39 RPS orbits over Iraq and Afghanistan, with an orbit defined as one 24-hour continuous mission. The goal is to reach 50 orbits by 2011 with some of the orbits consisting of the Reaper RPA and its Gorgon Stare collection platform, which can provide information on up to 12 targets at a time. With a goal of reaching 65 targets with the Gorgon Stare program and the potential of 50 orbits, there is the possibility of achieving video feeds on up to 3000 targets at a time.[16] Added to this capability is the increase in manned FMV collection platforms, specifically the MC-12 Liberty aircraft. Ironically, in contrast to previous periods in its history, Air Force intelligence, and the IC more broadly, may now have too much information and not enough people to analyze it. Yet, as noted earlier, once engaged, even if it started behind the power curve, air intelligence catches up quickly.

The problem is that air intelligence, while performing admirably in collecting and analyzing information on terrorist cells, is truncating itself by focusing once again on a single enemy, much as it did during the Cold War. The complete focus of intelligence agencies on supporting the current fight against terrorists and insurgents may well be preventing the IC from collecting on other potential enemies. While it is of the utmost importance to provide as much support as possible to friendly forces, it is

---

[16] Stew Magnuson, "Military 'Swimming in Sensors and Drowning in Data,'" *National Defense*, Jan 2010.

imperative that this not occur at the expense of collection on potential future threats.

This neglect is already occurring, despite repeated warnings from intelligence officials. According to a *Washington Times* article in January 2010, "The White House National Security Council recently directed US spy agencies to lower the priority placed on intelligence collection for China, amid opposition to the policy change from senior intelligence leaders who feared it would hamper efforts to obtain secrets about Beijing's Military and its cyber-attacks."[17]

Choosing to lower the priority of Chinese intelligence will lead to even further truncation in favor of intelligence collection on the current fight, and it will inevitably reduce the amount of intelligence currently maintained on China, a potential future enemy. According to the same article, "Army, Air Force, and Navy intelligence components are just beginning to understand the growing need to focus more intelligence assets on the challenges posed by China's military buildup and aggressive intelligence activities."[18] This lack of focus on a potential enemy shows that by over focusing in one area the country is once again truncating its intelligence capabilities and placing itself at great risk.

---

[17] Bill Gertz, "China Removed As Top Priority for Spies," *The Washington Times*, 20 January 2010.

[18] Gertz, "China Removed As Top Priority for Spies."

Conclusion

Preventing Truncation

The criticality of intelligence, both in the past and for the future, needs elaboration. Major credit for maintaining the military balance during the Cold War tends to go to the military forces themselves, strategic and conventional. At the same time, the contribution of intelligence tends to be overlooked…In the new strategic environment, intelligence will be no less important if it is properly directed.

William E. Odom

The truncation of intelligence capabilities can occur in a variety of ways. Three of the most common are to focus on a single adversary at the cost of collection on potential future adversaries or crises, to rely solely on one discipline for a majority of one's collection efforts, and to support only one force with the intelligence collected. Historically, the truncation of capabilities as a result of these three factors has led to failure and surprise. Further truncation can occur, and has occurred, in the United States through budget cuts and a flawed appreciation of the full range of armed conflicts our military may well have to face. The last seventy years of American military history provide three time periods that illustrate the truncation of intelligence capabilities relating specifically to airpower. By studying this history, we can more easily avoid future truncation, and therefore future surprises. During World War II, the United States, with significant support from the British, created a broad set of intelligence collection capabilities that enabled operations throughout the world against two significantly different enemies. These capabilities took advantage of both emerging technologies and tried-and-true methods—known today as tactics, techniques, and procedures—to develop intelligence on enemy capabilities, plans, and activities. From a SIGINT perspective, the use of radio intercept capabilities paired with decryption methods allowed friendly analysts to crack the diplomatic

codes of both the German and Japanese governments. This intelligence provided valuable indications of the effectiveness of Allied bombing, future enemy plans, and the location of enemy units, among many other things. The Allies also used an extensive IMINT collection capability to identify potential targets and assess the effects of friendly strikes on German and Japanese industry. Some of the most effective intelligence arrived through HUMINT methods from the French resistance and through prisoner of war questioning, providing information on enemy plans and identifying such things as the fact that the Germans were moving supplies via canals in the build up to, and during, the Normandy invasion. In all, this broad range of intelligence collection capabilities provided necessary information to leadership and contributed to the success of Allied forces over Germany and Japan.

After World War II, American intelligence capabilities continued to grow but ultimately became truncated by budgetary restraints and through an over-focus on one enemy. After World War II, the US Government cut back the armed forces' size and budget. The Air Force, officially created two years after the end of the war, had to fight for respect and money, despite the assets it brought to bear during the Cold War against the Soviet Union. With the creation of atomic and then nuclear weapons, the Air Force enjoyed a position of power within the Department of Defense as the primary delivery system for these new capabilities.

As a result of this reliance on the Air Force, air intelligence followed suit and began searching for potential targets within the Soviet Union. Soon a majority of the intelligence capabilities available focused on three things: indication and warning of potential Soviet aggressive moves, identification of Soviet and Warsaw Pact targets to strike, and methods to get strategic bombers to those targets. Intelligence capabilities grew to include satellite technology collecting both SIGINT and IMINT, airborne SIGINT "ferret" missions designed to force enemy

radars to radiate and then to collect the emissions from those radars, and high speed, high altitude aircraft such as the U-2 and SR-71 collecting IMINT on Soviet cities and bases. However, even as the technical capabilities associated with intelligence collection grew, the focus on a single enemy truncated the country's intelligence efforts.

When the Korean and Vietnam Wars began, air intelligence found itself unprepared for conflict with anyone other than the Soviet Union. In both conflicts, there was a shortage of trained intelligence personnel ready to analyze the little information available—a huge irony considering the availability of information from the French experience and the hundreds of reports filed by American military advisors before large-scale military commitment. There was also a lack of accurate maps and effective collection capabilities, which limited the overall effectiveness of friendly forces. The military was prepared for general nuclear war against the Soviet Union and believed that this preparation would suffice for any small wars that occurred throughout the world. Unfortunately, this presumption proved false and the IC had to expand rapidly and catch up in order to provide necessary information to the war fighter.

At the end of the Cold War, the IC once again had to deal with budget cuts that are an inevitable part of post-conflict governance. While maintaining a highly technical capability, which continued to include satellites and aircraft collecting a variety of intelligence, truncation occurred once again, this time because of a lack of guidance from leadership and policy makers and the Air Force's move to generalize the intelligence career field.

With the demise of the Soviet Union, intelligence lost its top-priority target, but it also should have lost the truncation that occurred because of its focus on that target. While the IC should have returned to the traditional role of identifying areas of concern or conflict and highlighting them to policy makers, it was instead sent on inappropriate

missions such as tracking water deprivation and tropical deforestation, utilizing limited resources that should have been employed to maintain a close watch on potential enemies.

For its part, the Air Force contributed to the truncation by adopting the historical position that the preparation of generalist intelligence officers was an appropriate method to save money while still maintaining capabilities. This approach to warfare and military personnel in general during the Cold War proved ineffective, and the same applied to the intelligence career field. Just as an administration, hesitant to endanger friendly lives, extensively used the precision capabilities of airpower, the Air Force was cutting back on the targeting capabilities that made this precision possible. By removing the targeting officer designation within the intelligence career field and closing the school that specialized in this area, leadership truncated the overall intelligence capabilities available to the nation.

Eventually, this post-Cold War truncation prevented air intelligence and the IC as a whole from identifying specific threats to US citizens and assets posed by extremists such as Osama bin Laden and his followers in the various Al Qaeda-affiliated organizations worldwide. After the 9/11 attacks, the IC had to adapt itself quickly for an unexpected fight. Taking a Cold War-optimized set of intelligence capabilities and adapting them to an unconventional fight, where the target is an individual and not a ship or tank, the IC developed a huge capacity to collect full motion video (FMV) and SIGINT and provide those inputs to forces on the ground. With potential collection on 3000 targets at a time with one system alone, air intelligence has once again shown its ability to catch up rapidly and provide needed information to policy makers and war fighters alike.

Once again, however, this focus on a single adversary is truncating this country's intelligence capabilities. By concentrating solely on collection against Al Qaeda and insurgents in Iraq and Afghanistan, the

IC is missing key indicators in current and future areas of concern. As budget cuts force all the armed services to make choices about what assets to support and what force numbers to maintain, intelligence (and, more broadly, intelligence, surveillance, and reconnaissance) will become more important. This reality is as true today as it has been throughout history. Representative Dan Glickman, former chairman of the House Permanent Select Committee on Intelligence stated in 1993 that, "Because of the rapidly changing nature of the threat to American interests…the need for timely and reliable intelligence is greater when our military forces are being withdrawn from overseas deployments and reduced in size. Early warning of hostile intentions or of the development of dangerous situations is critical if policy makers are to have the opportunity to consider a full range of responses."[1]

The IC cannot afford to let its guard down by ignoring such things as a strong cyber adversary or a nuclear-armed Iran. Leadership must find a way to fund an IC that can support the current fight while still looking for the future fights. To do this, the IC must develop a broad set of intelligence capabilities that can span a wide range of potential enemies, while still focusing on particular current enemies when required. A statement by a 1955 Technological Capabilities Panel to President Eisenhower still rings true today: "If intelligence can uncover a new military threat, we may take steps to meet it. If intelligence can reveal an opponent's specific weakness, we may prepare to exploit it. With good intelligence, we can avoid wasting our resources by arming for the wrong danger at the wrong time. Beyond this, in the broadest sense, intelligence underlies our estimate of the enemy and thus helps to guide our political strategy."[2]

---

[1] Dan Glickman, Hearing before the Permanent Select Committee on Intelligence, 103rd Cong., 1st sess., Mar 9, 1993, 2.

[2] Quoted in William E. Burrows, "Satellite Reconnaissance and the Establishment of a National Technical Intelligence Apparatus," in *The*

Intelligence Revolution: A Historical Perspective, (Washington DC: Office of Air Force History, 1988), 234.

Bibliography

Articles

Gertz, Bill. "China Removed As Top Priority for Spies," *The Washington Times*, 20 January 2010.

Glock, John R. "The Evolution of Air Force Targeting," *Airpower Journal* 8, no. 3 (Fall 1994).

Magnuson, Stew. "Military 'Swimming in Sensors and Drowning in Data,'" *National Defense*, Jan 2010.

Turner, Stansfield. "Intelligence for a New World Order." *Foreign Affairs*, Fall 1991, 158.

Secondary Sources

Aid, Matthew M. "The National Security Agency and the Cold War." In *Secrets of Signals Intelligence during the Cold War and Beyond*. Edited by Matthew M. Aid and Cees Wiebes. London: Frank Cass, 2001.

Aspin-Brown Commission. "The Evolution of the US Intelligence Community – An Historical Overview." In *Strategic Intelligence: Windows Into A Secret World*. Edited by Loch K. Johnson and James J. Wirtz. Los Angeles, CA: Roxbury Publishing Company, 2004.

Barlow, Jeffrey G. *Revolt of the Admirals*. Washington DC: Government Reprints Press, 2001.

Burrows, William E. "Satellite Reconnaissance and the Establishment of a National Technical Intelligence Apparatus." In *The Intelligence Revolution: A Historical Perspective*. Washington DC: Office of Air Force History, 1988.

Clausewitz, Carl von. *On War*. Edited by Michael Howard and Peter Paret. Princeton: Princeton University Press, 1984.

Cogan, Charles. "Hunters not Gatherers: Intelligence in the Twenty-First Century." In *Understanding Intelligence in the Twenty-First Century: Journeys in Shadows*. Edited by L.V. Scott and Peter Jackson. London: Routledge, 2004.

Crane, Conrad C. *American Airpower Strategy in Korea, 1950-1953*. Lawrence, KS: University Press of Kansas, 2000.

Ehlers, Robert. *Targeting the Third Reich: Air Intelligence and the Allied Bombing Campaigns.* Lawrence, KS: University Press of Kansas, 2009.

Farquhar, John T. *A Need to Know.* Maxwell AFB, AL: Air University Press, 2004.

Futrell, Robert F. *The Advisory Years to 1965*. Washington DC: Office of Air Force History, 1981.

Futrell, Robert F. "USAF Intelligence in the Korean War." in *The Intelligence Revolution: A Historical Perspective*. Washington DC: Office of Air Force History, 1988.
Galway, Lionel A, et al. *Understrength Air Force Officer Career Fields: A Force Management Approach*. Santa Monica, CA: Rand Corporation, 2005.
Gentile, Gian. *How Effective is Strategic Bombing?* New York, NY: New York University Press, 2001.
Goodman, Allen E. "Intelligence in the Post-Cold War Era." In *In From the Cold: The Report of the Twentieth Century Fund Task Force on the Future of U.S. Intelligence*. New York, NY: The Twentieth Century Fund Press, 1996.
Griffith, Thomas E. Jr. *MacArthur's Airman: General George C. Kenney and the War in the Southwest Pacific.* Lawrence, KS: University Press of Kansas, 1998.
Herman, Michael. "Intelligence and National Action." in *Strategic Intelligence: Windows Into A Secret World*. Edited by Loch K. Johnson and James J. Wirtz. Los Angeles, CA: Roxbury Publishing Company, 2004.
Hughes-Wilson, Colonel John. *Military Intelligence Blunders*. New York: Carroll & Graf Publishers, 1999.
Jackson, Robert. *High Cold War: Strategic Air Reconnaissance and the Electronic Intelligence War*. Somerset: Patrick Stevens Limited, 1998.
Kessler, Ronald. *The Terrorist Watch*. New York, NY: Three Rivers Press, 2007.
Kiras, James D. *Special Operations and Strategy: From World War II to the War on Terrorism.* London: Routledge, 2006.
Komer, R.W. *Bureaucracy Does Its Thing: Institutional Constraints on US-GVN Performance in Vietnam.* Santa Monica, CA: Rand, 1972.
Kreis, John F. *Piercing the Fog: Intelligence and Army Air Forces Operations in World War II.* Bolling AFB: Air Force History and Museums Program, 1996.
Lowenthal, Mark M. *Intelligence: From Secrets to Policy*. Washington DC: CQ Press, 2009.
MacPherson, Nelson. *American Intelligence in War-Time London: The Story of the OSS*. London: Frank Cass Publishers, 2003.
MacIsaac, David. *Strategic Bombing in World War Two*. New York, NY: Garland Publishing, 1976.
Momyer, General William W. *Air Power in Three Wars (WWII, Korea, Vietnam)*. Maxwell AFB, AL: Air University Press, 1978.
Moody, Walton S. *Building a Strategic Air Force*. Washington DC: AF History and Museums Program, 1995.
National Commission on Terrorist Attacks Upon the United States. *The 9/11 Commission Report*. New York: WW Norton & Company, 2004.

Odom, William E. *America's Military Revolution: Strategy and Structure After the Cold War*. Washington, DC: The American University Press, 1993Office of the NGA Historian. *The Advent of the National Geospatial-Intelligence Agency.* Dayton, OH: Office of Corporate Relations, 2007.
Overy, Richard. *The Air War 1939-1945*. Washington DC: Potomac Books, 2005.
Ratcliff, R.A. *Delusions of Intelligence: Enigma, Ultra, and the End of Secure Ciphers.* New York, NY: Cambridge University Press, 2006.
Rearden, Steven L. "US Strategic Bombardment Doctrine since 1945." In *Case Studies in Strategic Bombardment*. Edited by R. Cargill Hall. Washington DC: USAF History and Museums Program, 1998.
Turner, Michael A. *Why Secret Intelligence Fails*. Washington DC: Potomac Books, 2006.
United States Strategic Bombing Surveys (European War). Maxwell AFB, AU Press: 1987.
United States Strategic Bombing Surveys (Pacific War). Maxwell AFB, AU Press: 1987.
Warner, Michael. "Central Intelligence: Origin and Evolution." in *Intelligence and the National Security Strategist*. Edited by Roger Z George and Robert D. Kline. Lanham, MD: Rowman and Littlefield Publishers, 2006.
Weinberg, Gerhard L. *A World at War: A Global History of World War II*. New York, NY: Cambridge University Press, 1994.
Wohlstetter, Roberta. *Pearl Harbor: Warning and Decision*. Stanford, CA: Stanford University Press, 1962.

Primary Documents

AC/S Intelligence, HQ PACAF. Report on PACAF Experience in Air Intelligence in support of Counterinsurgency Operations.
2nd Air Division. "Briefing to the Secretary of Defense." 6 May 1963.
CORONA HARVEST Report, 1963, located at AFHRA, Call Number K526.626-1.
Hebert, Colonel Alvin. "Evaluation of the Effectiveness of the United States Air Force in the Korean Campaign." Air Force Historical Research Agency Archives call no. K168.041-1 v.20.
Deputy for Intelligence, 2nd Air Division, 1 July-31 December 1965.
Deputy for Intelligence, HQ Fifth Air Force in Korea. Historical Report, 25 Jun – 31 Oct 1950.
HQ 497th Intelligence Group, Targeting Directorate. "Air Force Targeting 2000," 1 November 1993.
HQ Air Intelligence Agency. *A Brief History of the Air Intelligence Agency and its Predecessor Organizations*. San Antonio, TX: AIA Press, 1997.

Laubenthal, Capt Sanders A. and Dr John W Leland. "SAC Intelligence Collection During the Korean War." 25 Jun 1950 – 27 July 1953.
Laubenthal, Capt Sanders A. "The Missiles In Cuba, 1962: The Role of SAC Intelligence." 544th Strategic Intelligence Wing, May 1984.
Weyland, General O.P. "Some Lessons of the Korean War and Conclusions and Recommendations Concerning USAF Tactical Air Responsibilities." 10 Oct 1950.

Letters and Endorsements

General William Momyer, USAF (ret) to General Richard Ellis, Vice Chief of Staff, USAF, 1975.

Manuals, Instructions, Directives, and Other Publications

Air Force Pamphlet (AFPAM) 200-17. *An Introduction to Air Force Targeting*, 23 June 1989.
HQ Tactical Air Command/INXP. "Tactical Air Intelligence Concepts and Doctrine." Langley AFB, VA, 15 Aug 1970.
Training Project Outlines for Basic Pilot, Advanced Observer – Intelligence. Air Training Command. April 1952.
US Army Air Forces, *Group and Squadron S-2,* (Harrisburg, PA: Army Air Forces Intelligence School, 1942), 3.

Public Documents

An overview of the United States Intelligence Community for the 111th Congress, 2009.
Clinton, William. *A National Security Strategy of Engagement and Enlargement*. Washington D.C.: The White House, Office of the Press Secretary, July 1994.
Glickman, Dan. Hearing before the Permanent Select Committee on Intelligence, 103rd Cong., 1st sess., Mar 9, 1993.
House, *IC21: The Intelligence Community in the 21st Century Hearings: Hearings before the Permanent Select Committee on Intelligence*. 104th Cong., 1st sess., 1995.
Intelligence Reform and Terror Prevention Act of 2004. Public Law 108-458, Sect 118 STAT 3665.
Permanent Select Committee on Intelligence. *IC 21: Intelligence Community in the 21st Century*. (Washington DC: Government Printing Office, 1996), IC21007.

Interviews/E-Mails

Dougher, Major General Charles B. USAF Oral History Interview Transcript. Maxwell AFB, AL: Air Force Historical Research Agency, 1961.

Keegan, Major General George J. Jr. USAF Oral History Interview Transcript. Maxwell AFB, AL: Air Force Historical Research Agency, 1987.

Klocko, Lieutenant General Richard P. Air Force Intelligence Oral History Program. San Antonio, TX: HQ Air Intelligence Agency History Office, 15 Oct 1999.

Koller, Colonel Rudy. Cold War Intelligence Chronicles. San Antonio, TX: HQ Air Intelligence Agency History Office, 30 May 1998.

Macia, Colonel James H. Cold War Intelligence Chronicles. San Antonio, TX: HQ Air Intelligence Agency History Office, 15 Jan 2000.

Morris, Colonel Jack. Cold War Intelligence Chronicles. San Antonio, TX: HQ Air Intelligence Agency History Office, 1 May 1999.

Partridge, General Earle E. US Air Force Oral History Program. Maxwell AFB, AL: Air Force Historical Research Agency, 23-25 Apr 1974.

Peterson, Major General Chesley G. US Air Force Oral History Program. Maxwell AFB, AL: Air Force Historical Research Agency, 19-30 Aug 1985.

Weyland, General O.P. US Air Force Oral History Interview Transcript. Maxwell AFB, AL: Air Force Historical Research Agency, 11 Feb 1988.

Sources Cited/Quoted in Another Source

Kuter, Laurence. In *Strategic Bombing In World War Two*. By David MacIsaac. New York, NY: Garland Publishing, 1976.

Speeches

Blair, Admiral Dennis. "Remarks by the Director of National Intelligence." *Alfred M. Landon Lecture Series on Public Issues*. Kansas State University, 22 Feb 2010.

Bush, George H.W. "Address to Joint Session of Congress, 11 Sep 1990." As quoted in *Encyclopedia of Leadership*. Edited by George R Goethals, et al. Thousand Oaks, CA: Sage Publishers, 2004.

Hinsley, Sir Harry. "The Intelligence Revolution: A Historical Perspective." Harmon Memorial Lecture. US Air Force Academy, Colorado Springs, CO, 12 Oct 1998.
McDonald, Major General George C. "US Air Force Intelligence Prior to and During World War II and Today." Lecture. Air War College, Maxwell AFB, AL, 12 Nov 1947.

Web Content

Central Intelligence Agency. "CIA at a Glance, 12 Dec 2008." https://www.cia.gov/library/publications/additional-publications/cia-at-a-glance/index.html.
Defense Intelligence Agency. "Mission." http://www.dia.mil/thisisdia/mission.htm.
National Geospatial-Intelligence Agency. https://www1.nga.mil/Pages/Default.aspx.
National Reconnaissance Office. "NRO Factsheet 2007." http://www.nro.gov/NRO_Fact_Sheet.pdf.
National Security Agency. "Signals Intelligence." http://www.nsa.gov/sigint/index.shtml.